ORDER NO. GAD8506501C4

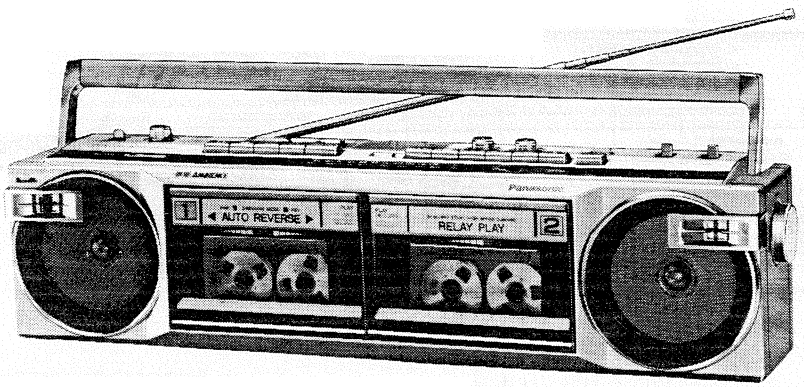
Service Manual

Radio Cassette

RX-F22

(Silver)

FM-AM-FM Stereo Dual Cassette Recorder



This is the Service Manual for the following areas.

ME ··· For AAFES EUROPE.

MF ··· For AAFES PACIFIC.

MZ ··· For Audio Club.

Mechanism Series

Tape 1 ... RX-F9 Mechanism Series

Tape 2 ... RX-F33 Mechanism Series

■ SPECIFICATIONS

General:

Power Requirement:	AC; 110~115/115~127/200~220/230~250V, 50/60Hz Battery; 9V (Six "C" Size Flashlight Batteries) (Panasonic UM-2 or equivalent)
Power Consumption:	14W (AC only)
Power Output:	8W (4W×2)...RMS (max.) 16W (8W×2)...PMPO
Speaker:	Woofer; 10cm PM Dynamic Speaker (3Ω) Tweeter; 2cm Ceramic Speaker (200Ω)
Input:	MIC; sensitivity 1.5mV/applicable microphone impedance 200~600Ω, φ3.5 Recom. Mic RP-V305 Line in; sensitivity 200mV/50kΩ over
Output:	Headphones; 32Ω, φ3.5
Dimensions:	510mm(W)×138mm(H)×125mm(D)
Weight:	3.6kg without batteries

Radio Section:

Radio Frequency Range:	FM; 88~108MHz AM; 525~1610kHz
Intermediate Frequency:	FM; 10.7MHz AM; 455kHz
Sensitivity:	FM; 3.2μV/50mW output AM; 112μV/m/50mW output

Tape Deck Section: TAPE 1

Frequency Response:	100~12,000Hz (with normal tape)
Tape Speed:	1-7/8 ips (4.8cm/s)
Track System:	4-track 2 channel stereo playback

Tape Deck Section: TAPE 2

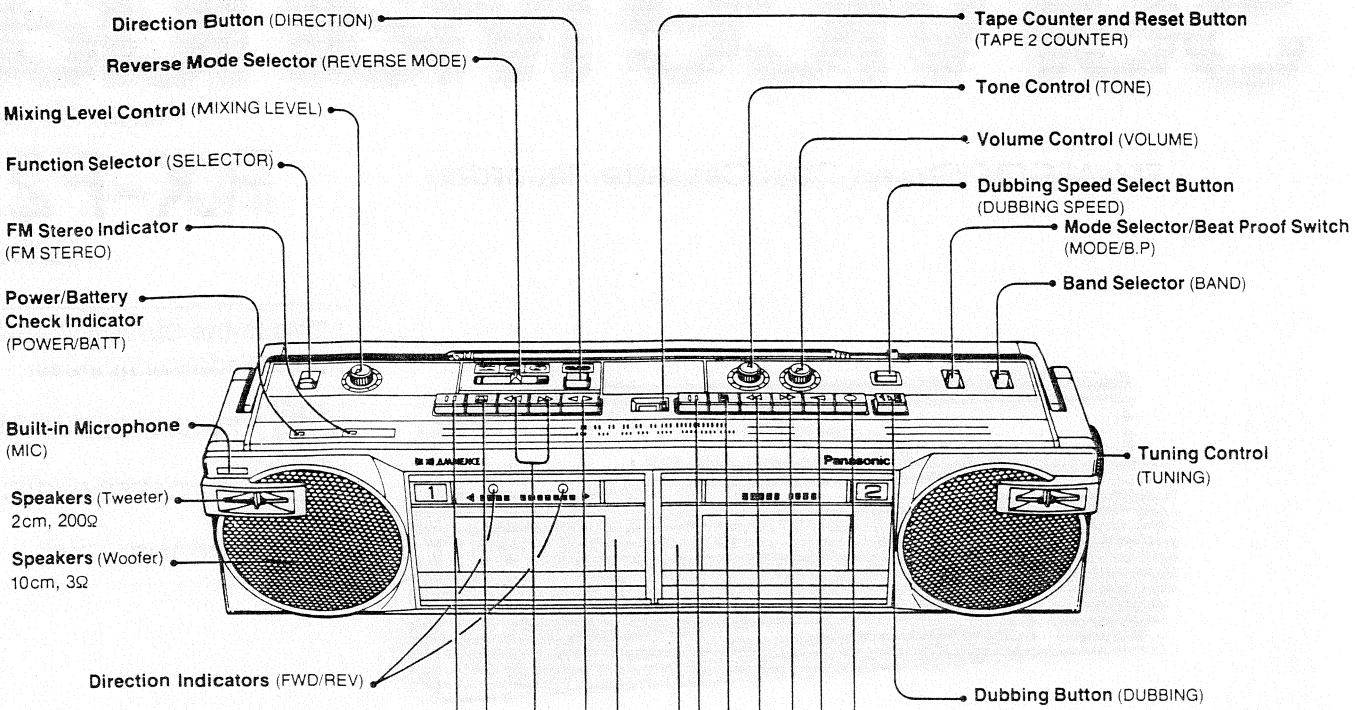
Frequency Response:	100~12,000Hz (with normal tape)
Recording system:	AC bias, Magnet erase
Tape Speed:	1-7/8 ips (4.8cm/s)
Track System:	4-track 2 channel stereo recording and playback

Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

Panasonic Tokyo Office
Matsushita Electric Trading Co., Ltd.
1-2, 1-chome, Shibakoen, Minato-ku, Tokyo 105, Japan

LOCATION OF CONTROLS AND COMPONENTS



TAPE 1

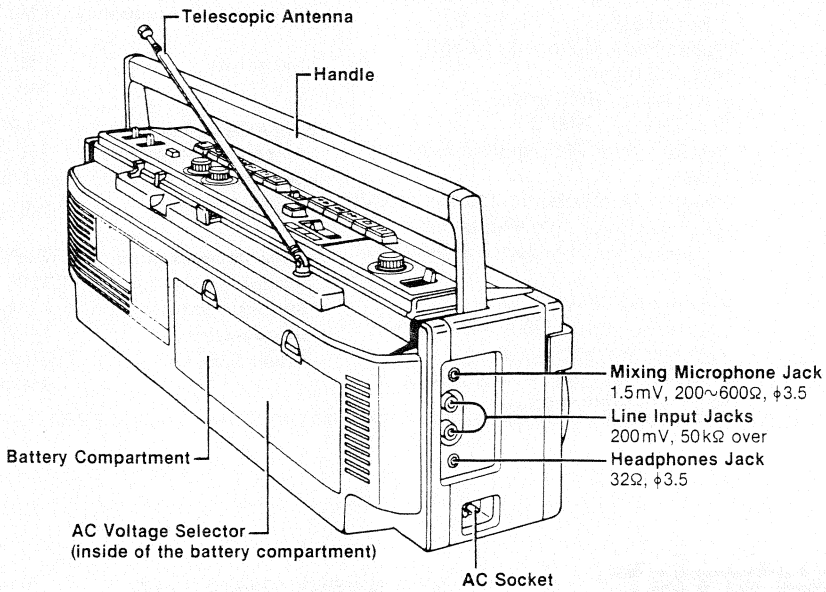
Controls for Playback

- Pause Button (▯▯PAUSE)
- Stop/Eject Button (⏏STOP/EJECT)
- Fast/Cue Buttons (◁◁/▷▷ FAST/CUE)
- Playback Button (◁▷ PLAY)
- Cassette Compartment

TAPE 2

Controls for Recording and Playback

- Record Button (REC)
- Playback Button (◁ PLAY)
- Rewind/Review Button (▷▷ REW/REV)
- Fast Forward/Cue Button (◁◁ FF/CUE)
- Stop/Eject Button (⏏STOP/EJECT)
- Pause Button (▯▯PAUSE)
- Cassette Compartment



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DISASSEMBLY INSTRUCTION

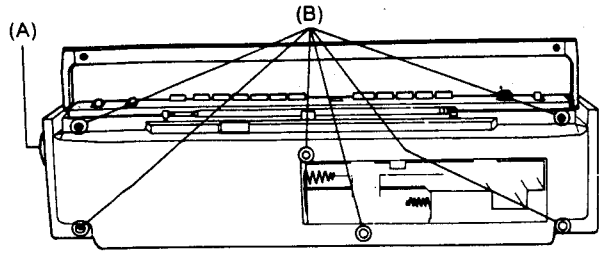


Fig. 1

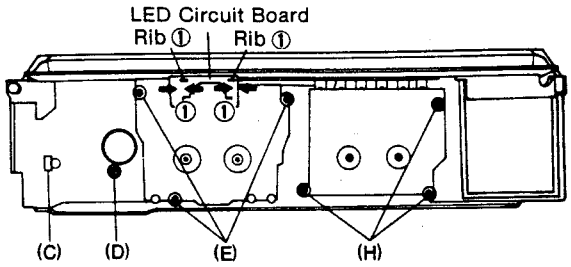


Fig. 3

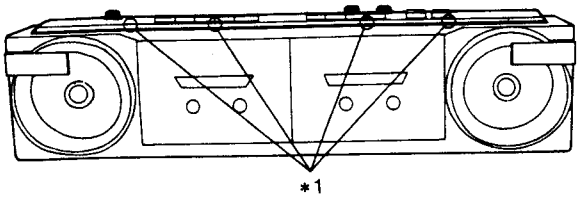


Fig. 2

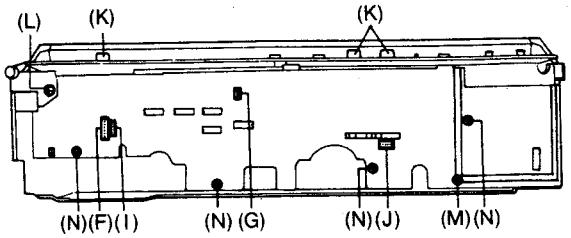


Fig. 4

Ref. No.	Shown in Fig. —.	To remove —.	Remove —.
1	1	Front Cabinet	Knob ..... (A)×1
2			Screw (3×55)mm ..... (B)×6
3	2		(*1) Inner Rib ..... 4 point
4	3		Socket (CP5) ..... (C)×1
5	3	Mechanism [1]	Push the ribs ① in the direction of arrows ① and remove the LED circuit board.
6			Screw (3×10)mm ..... (D)×1
7			Screw (3×50)mm ..... (E)×3
8	4		Socket (CP4) ..... (F)×1
9			Socket (CP1) ..... (G)×1
10	3	Mechanism [2]	Screw (3×50)mm ..... (H)×3
11	4		Socket (CP3) ..... (I)×1
12			Socket (CP2) ..... (J)×1
13	4	Main Circuit Board	Knob ..... (K)×3
14			Screw (3×8)mm ..... (L)×1
15			Screw (3×50)mm ..... (M)×1
16			Screw (3×10)mm ..... (N)×4

■ TO REMOVE THE CASSETTE HOLDER COVER

The cassette holder cover for tape [2] is removed as shown in this illustration.

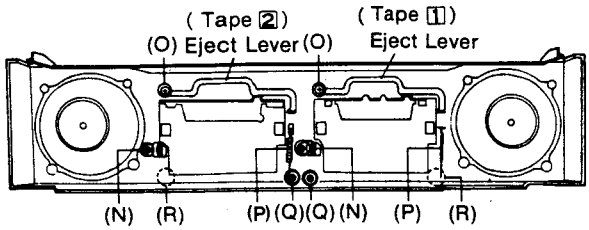


Fig. 5

1) Screw (N) (3×10)mm×1 (See Fig. 5)
2) Remove the screw (O) (3×6)mm×1 and remove the Eject Lever (See Fig.5)
3) Remove the screw (Q) (3×8)mm×1 (See Fig. 5)

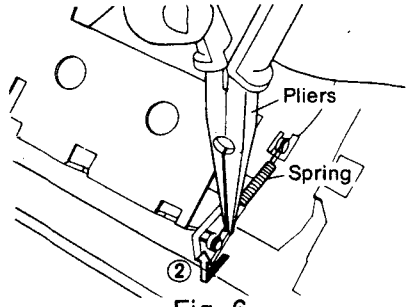


Fig. 6

4) open the cassette holder cover and remove spring (P) in the direction of arrow ②. (See Figs. 5 and 6)

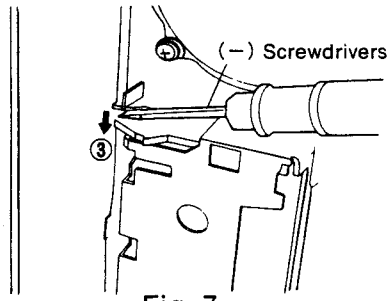


Fig. 7

5) Close the cassette holder cover and push part (R) inward to detach the hinge in the direction of arrow ③. (See Figs. 5 and 7)
6) Open the cassette holder cover.

■ TO REMOVE THE JACK BOARD AND DC IN JACK PC BOARD

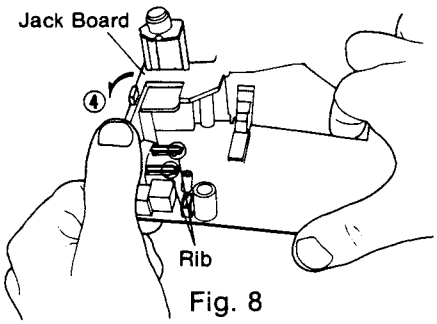


Fig. 8

1) Remove the jack plate in the direction of arrow ④. (See Fig. 8)

■ TO REMOVE THE HANDLE

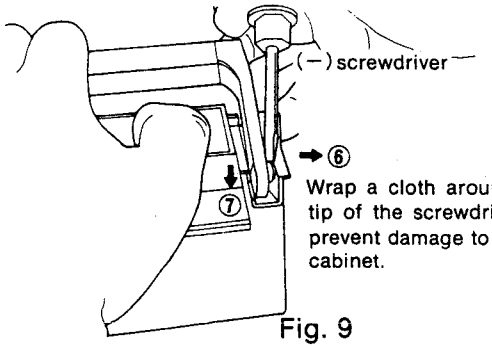


Fig. 9

1) Push the handle toward the rear cabinet (See Fig. 9)
2) Push the rear panel in the direction of arrow ⑥ with a straight slot screwdriver or similar instrument, then remove the handle in the direction of arrow ⑦. (See Fig. 9)

■ TEMPORARILY FASTENING THE DIAL DRUM.

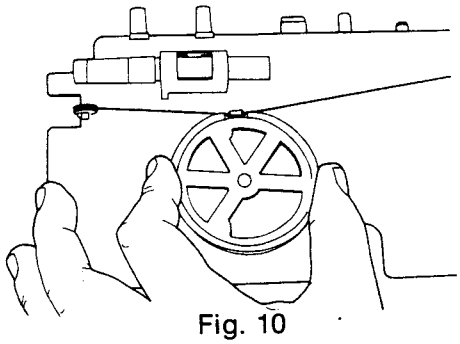


Fig. 10

1) Hook the end of the dial rope onto the notch on the dial drum as shown in Fig. 10.

■ PRECAUTIONS WHEN INSTALLING THE DIAL DRUM

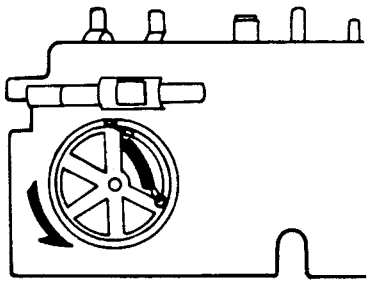


Fig. 11

1) Turn the variable capacitor in the direction of the arrow.
2) Install the dial drum, make sure it is positioned as shown in Fig. 11.

■ DIAL THREADING

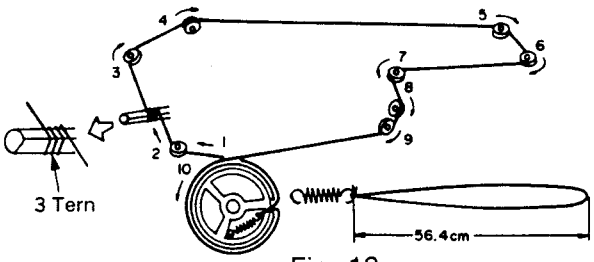


Fig. 12

Be sure to fold at the (▼) mark so that mark is on the outside.

ELECTRICAL PARTS LIST

Numbering System of Resistor

Example

ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value (1000Ω)
ERX	2	AN	J	2R2
Type	Wattage	Shape	Tolerance	Value (2.2Ω)

Resistor Type	Wattage Tolerance
ERD: Carbon ERG: Metal Film ERX: Metal Film ERQ: Fuse Type Metal RRD: Carbon (Chip Type)	10 : 1/8 W J : ±5% 12 : 1/2 W 25 : 1/4 W 1 : 1 W 18 : 1/8 W

Numbering System of Capacitor

Example

ECKD	1H	102	Z	F
Type	Voltage	Value (1000 pF)	Tolerance	Peculiarity
ECEA	50	M	R47	
Type	Voltage	Peculiarity	Value (0.47 µF)	

Capacitor Type	Voltage		Tolerance
	ECEA Type	Other	
ECEA: Electrolytic ECCD: Ceramic ECKD: Ceramic ECQM: Polyvester ECQP: Polypropylene ECET: Electrolytic ECEA□□□N: Non Polar Electrolytic QCU□: Ceramic (Chip Type) ECUX: Ceramic (Chip Type)	0J : 6.3 V 1A : 10 V 1C : 16 V 1E : 25 V 1H : 50 V 1V : 35 V 50 : 50 V 25 : 25 V 16 : 16 V	2H : 500 V DC 1 : 100 V DKC : 400 V AC	C : ±0.25 pF J : ±5% K : ±10% Z : +80%, −20% P : +100%, −0%

REPLACEMENT PARTS LIST

Important safety notice
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

RESISTORS

Ref. No.	Part No.
R 1, 6, 136, 142, 236, 242, 311, 314, 315, 352, 354, 356, 359, 362, 364, 369, 371, 373	ERD16TJ103
R 2, 133, 233	ERD16TJ272
R 3, 8, 35, 128, 228, 236, 242, 247, 311, 314, 315, 352, 354, 356, 359, 364, 371, 373	ERD16TJ822
R 4, 335	ERD25TJ101
R 5, 147, 247, 348	ERD16TJ123
R 7, 20, 151, 251	ERD16TJ101
R 9, 129, 229	ERD16TJ182
R 10	ERD16TJ471
R 18, 138, 238, 350	ERD16TJ331
R 19, 36, 341	ERD16TJ681
R 26	ERD25TJ103
R 27	ERD16TJ393
R 28, 302	ERD16TJ222
R 29, 322	ERD25FJ560
R 30, 31, 132, 232	ERD16TJ183
R 32	ERD25TJ220
R 33, 34	ERD16TJ332
R 37, 308	ERD16TJ562
R 38, 144, 244, 320	ERD16TJ473
R 39	ERD25TJ681
R 101, 201, 312, 316, 363	ERD16TJ563
R 102, 202, 309, 338	ERD16TJ221
R 103, 203, 321	ERD16TJ100
R 104, 113, 125, 149, 204, 213, 225, 249, 304, 306, 310, 351	ERD16TJ102
R 105, 108, 114, 205, 208, 214, 252	ERD16TJ105
R 106, 116, 137, 206, 216, 237, 368	ERD16TJ153
R 107, 115, 126, 207, 215, 226	ERD16TJ560
R 109, 117, 209, 217	ERD16TJ561
R 111, 122, 211, 222, 301	ERD16TJ682
R 112, 212	ERD25TJ104
R 120, 220, 305	ERD16TJ391
R 121, 131, 221, 231	ERD16TJ104
R 123, 223	ERD16TJ161
R 124, 141, 145, 224, 241, 245	ERD16TJ223
R 127, 227, 319	ERD16TJ823
R 134, 234, 333	ERD16TJ271
R 135, 140, 146, 235, 240, 246, 318, 343, 347	ERD16TJ472
R 139, 239	ERD16TJ152
R 143, 243	ERD16TJ333
R 148, 248	ERD25TJ272
R 150, 250	ERD16TJ010
R 152	ERD25TJ105
R 303	ERD25TJ221
R 307	ERD16TJ474
R 313	ERD25TJ563
R 331	ERD25TJ102
R 332	ERD16TJ155
R 334	ERD25FJ470
R 336, 342, 349	ERD16TJ122
R 337	ERD16TJ121
R 339	ERD25TJ391
R 340, 357	ERD16TJ151
R 344, 353, 355	ERD16TJ224
R 345, 346	ERD16TJ124
R 361	ERD25TJ224
R 366	ERX12ANJR22A
C 21, 121, 130, 221, 230, 321, 338, 340, 345, 346	RCBS1H102KB
C 23, 106, 206, 305, 315	RCBS1H221KB
C 25	RCBS1H3R3KL
C 26	ECEA1HU2R2
C 27, 28, 41, 42, 323	ECFDD223MX
C 29	RCBS1H331KB
C 30, 337	ECEA0JU470
C 31	ECBT1C223NY
C 32, 308, 311, 331, 335	ECEA1EU4R7
C 35, 344	ECFDD153MXY
C 36, 43, 126, 226	ECFDD473MXY
C 38	ECEA0JU101
C 39, 40, 112, 212	ECEA1HUR47
C 44	ECQP1102JZ
C 45, 124, 129, 224, 229, 302	ECEA1HU0R1
C 46, 47, 101, 105, 115, 120, 122, 201, 205, 215, 220, 222, 304, 348	ECEA1HU010
C 102, 202	RCBS1H122MX
C 103, 107, 207, 208	ECEA50ZR22
C 104, 108, 109, 204, 208, 209, 306	ECEA1HUR22
C 110, 125, 210, 225	ECFDD102KVY
C 111, 211, 333, 349	ECEA0JU330
C 113, 117, 213, 217	RCBS1H223MY
C 114, 214	ECFDD272KVY
C 116, 216	RCBS1H430JL
C 118, 218	ECFDD103KVY
C 119, 219	ECFDD183KXY
C 123, 223	ECFDD103MXY
C 127, 227	RCBS1H681KB
C 128, 228	ECFDD273MX
C 131, 231	ECEA1AU101
C 133, 233, 303, 334	ECEA1CU470
C 134, 234	ECQV1H224JZ
C 135, 235, 341	ECEA1AU471
C 301	ECFDD683MXY
C 307, 309, 310, 312, 322	ECEA1CU100
C 316	ECQP1391JZ
C 317	ECQP1392JZ
C 319	ECFDD182KVY
C 330, 332, 339	ECEA0JU471
C 336	ECBT1C103MX
C 342	ECEA1CU332
C 371	ECEA1CSS102
C 401, 402, 403, 404	ECKD1H103ZF
C 410	ECBT1H101J

CAPACITORS

Ref. No.	Part No.
C 1, 22, 34, 132, 232	RCBS1H103NY
C 2	RCBS1H101KB
C 3	RCBS1H200JC
C 4	RCBS1H150JU
C 5	RCBS1H100JU
C 6	RCBS1H300JL
C 12	RCBS1H220JL
C 16	RCBS1H2R7KL
C 17	ECBT1H1R5ML

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description
IC 1	RVIBA4232L	Integrated Circuit
IC 2	RVIBA1332L	Integrated Circuit
IC 4	RVIM4066BP	Integrated Circuit
IC 5	AN7312	Integrated Circuit
IC 7	RVITC4030BP	Integrated Circuit
IC 8	RVITC4069BP	Integrated Circuit
IC 9	RVITC4011BP	Integrated Circuit
IC 10	RVILA4508	Integrated Circuit

TRANSISTORS

Ref. No.	Part No.	Part Name & Description
Q 1, 2, 3	2SC3315C	Transistor
Q 101, 102, 201, 202, 301	2SC1740SLNS	Transistor
Q 103, 104, 106, 203, 204, 206, 303, 304, 306, 308, 310, 311	2SC1740SR	Transistor
Q 105, 205, 312	2SA1309R	Transistor
Q 307	2SD638R	Transistor
Q 309	2SC1318-R	Transistor

DIODES & RECTIFIERS

Ref. No.	Part No.	Part Name & Description
D 5, 7, 8, 10, 101, 103, 201, 202, 203, 307, 309, 311, 312, 317	MA165	Diode
D 11	MA1068	Diode
D 102, 302, 303, 306, 308, 310	MA161	Diode
D 304	RVDRD4R7JB2	Diode
D 305	MA4068	Diode
D 313, 314	LN216RP	Diode, FM STEREO, POWER/BATT IND
D 315, 316	LN330GPP	Diode, FWD/REV IND
D 401, 402, 403, 404	RVDSM1A02	Diode

COILS

Ref. No.	Part No.	Part Name & Description
L 2	RLD4Y44	Coil, FM ANT
L 4	RLQY32S1	Choke Coil, FM TRAP
L 6	RLD4Y43	Coil, FM OSC
L 8	RLF2V80	Bar Antenna, AM
L 9	RL02M3	Oscillator Coil, AM
L 101, 201	RLQZR682K	Choke Coil, REC
L 301	RL09B13	Oscillator Coil, BIAS

TRANSFORMERS

Ref. No.	Part No.	Part Name & Description
T 1, 3	RLI4M101	I.F. Transformer, FM
T 2	RLI2M227	I.F. Transformer, AM
T 401	RLT5Z3X4B	Power Transformer ⚠

VARIABLE CAPACITORS

Ref. No.	Part No.	Part Name & Description
VC 1, 2, 3, 4 (CT 1, 2, 3, 4)	RCV4LC2V1K	Tuning Capacitor

VARIABLE RESISTORS

Ref. No.	Part No.	Part Name & Description
VR 1	EVN61AA00B14	Variable Resistor, VCO
VR 302	EVN61AA00B54	Variable Resistor, Bias Current
VR 303, 304	EVN61AA00B53	Variable Resistor, TAPE SPEED
VR 305	EWHP4AF20A53	Variable Resistor, MIX
VR 306	EWCVBAF20A54	Variable Resistor, TONE
VR 307	EWCTRAF20B54	Variable Resistor, VOLUME

CERAMIC FILTERS

Ref. No.	Part No.	Part Name & Description
CF 1	RVFSFE107MAZ	Ceramic Filter, FM
CF 2	RVFSFU455B	Ceramic Filter, AM

FILTER

Ref. No.	Part No.	Part Name & Description
Z 1	RXABPWB5A	Component Combinations

SWITCHES

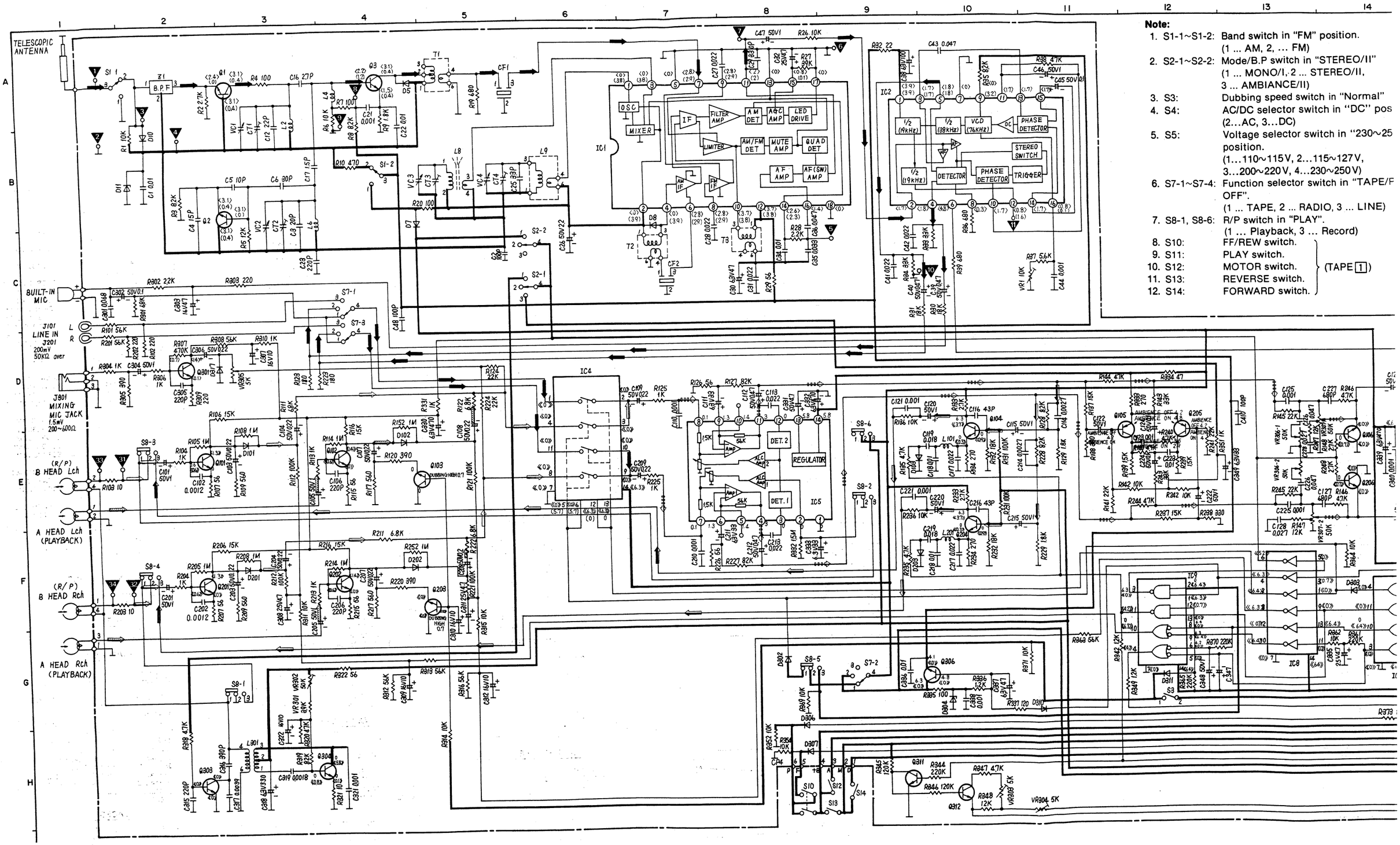
Ref. No.	Part No.	Part Name & Description
S 1	RST2B45Z	Lever Switch, BAND
S 2	RST3B28Z	Lever Switch, Mode/Beat Proof
S 3	RSH2B30Z	Push Switch, DUBBING SPEED
S 5	RSR4A06Y	Switch, Voltage Selector ⚠
S 7	RST3D21Z	Lever Switch, FUNCTION
S 8	QSS6211	Slide Switch, R/P
S 10, 11	QSB0321	Switch FF/REW, PLAY
S 12	RSH1B10Z	Push Switch, Motor
S 13	QSB0253	Switch, Reverse
S 14	QSB0323	Switch, FWD
S 15	RSH1A55Z	Push Switch, Dubbing
S 16	RSH1A57Z	Push Switch, FF/REW
S 17	QSB0236	Switch, PLAY
S 18	QSB0254	Switch, Motor

JACKS

Ref. No.	Part No.	Part Name & Description
J 101	RJF1094Z	Line IN
J 201	RJF1094Y	Line IN
J 301	QJA0172	Jack, MIX MIC, ϕ3.5
J 302	RJJ1D27Z	Jack, Headphones, ϕ3.5
J 303 (S4)	RJJ112Z	Jack, AC IN ⚠

RX-F22 RX-F22

SCHEMATIC DIAGRAM

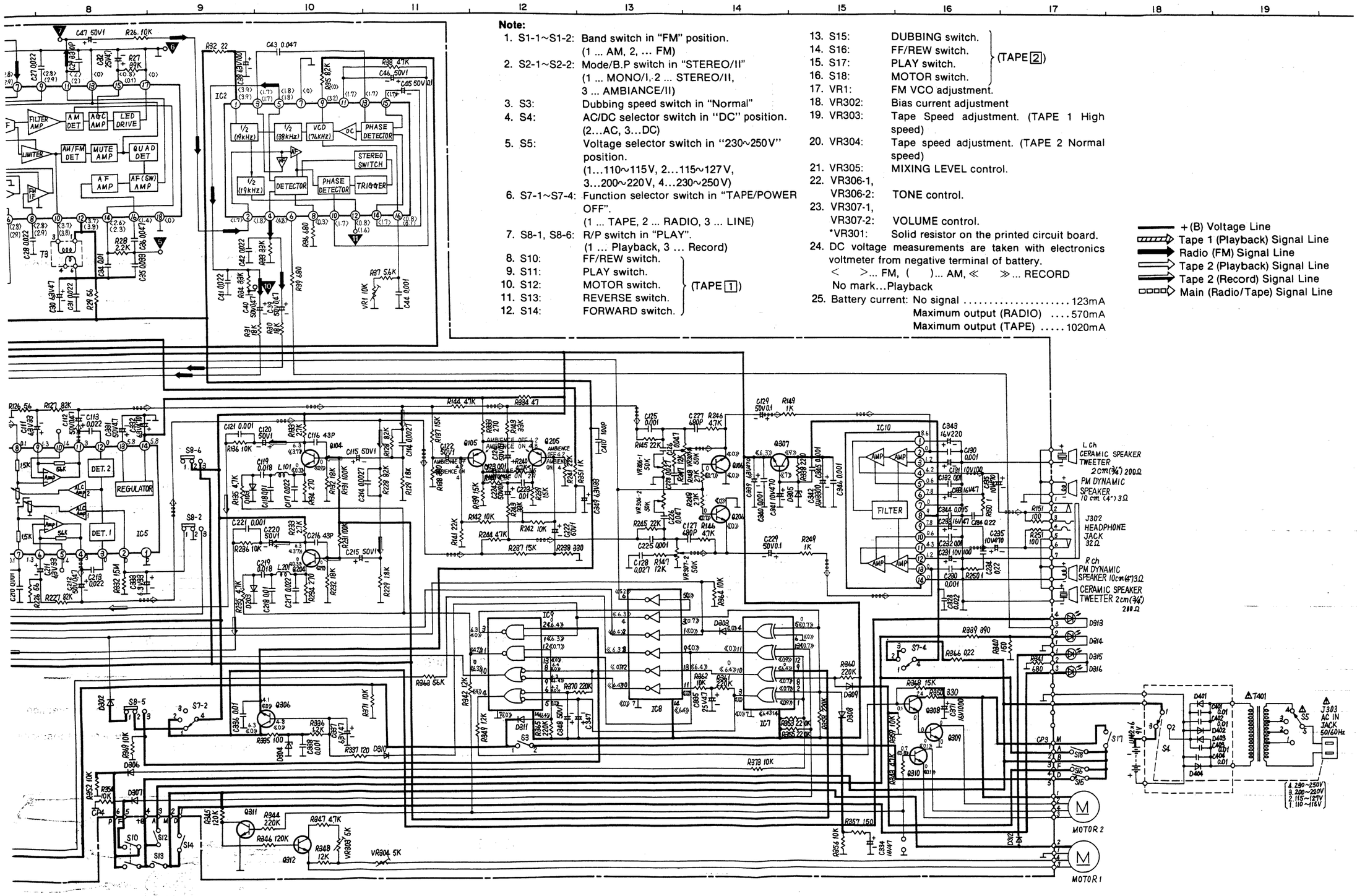


Note:

1. S1-1~S1-2: Band switch in "FM" position. (1 ... AM, 2, ... FM)
2. S2-1~S2-2: Mode/B.P switch in "STEREO/II" (1 ... MONO/I, 2 ... STEREO/II, 3 ... AMBIANCE/II)
3. S3: Dubbing speed switch in "Normal"
4. S4: AC/DC selector switch in "DC" pos (2...AC, 3...DC)
5. S5: Voltage selector switch in "230~25 position. (1...110~115V, 2...115~127V, 3...200~220V, 4...230~250V)
6. S7-1~S7-4: Function selector switch in "TAPE/F OFF". (1 ... TAPE, 2 ... RADIO, 3 ... LINE)
7. S8-1, S8-6: R/P switch in "PLAY". (1 ... Playback, 3 ... Record)
8. S10: FF/REW switch.
9. S11: PLAY switch.
10. S12: MOTOR switch.
11. S13: REVERSE switch.
12. S14: FORWARD switch.

} (TAPE 1)

SCHEMATIC DIAGRAM



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4. S4: AC/DC selector switch in "DC" position. (2...AC, 3...DC)
5. S5: Voltage selector switch in "230~250V" position. (1...110~115V, 2...115~127V, 3...200~220V, 4...230~250V)
6. S7-1~S7-4: Function selector switch in "TAPE/POWER OFF". (1 ... TAPE, 2 ... RADIO, 3 ... LINE)
7. S8-1, S8-6: R/P switch in "PLAY". (1 ... Playback, 3 ... Record)
8. S10: FF/REW switch.
9. S11: PLAY switch.
10. S12: MOTOR switch.
11. S13: REVERSE switch.
12. S14: FORWARD switch.

(TAPE 1)

13. S15: DUBBING switch.
14. S16: FF/REW switch.
15. S17: PLAY switch.
16. S18: MOTOR switch.

(TAPE 2)

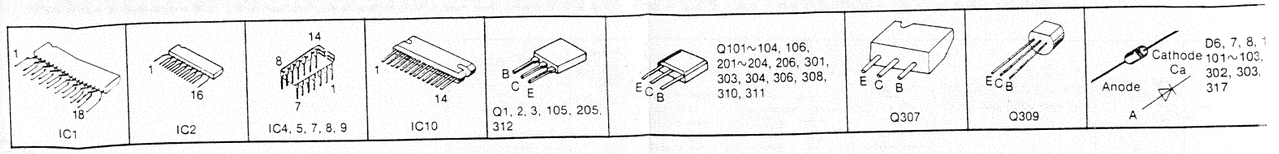
17. VR1: FM VCO adjustment.
18. VR302: Bias current adjustment
19. VR303: Tape Speed adjustment. (TAPE 1 High speed)
20. VR304: Tape speed adjustment. (TAPE 2 Normal speed)
21. VR305: MIXING LEVEL control.
22. VR306-1, VR306-2: TONE control.
23. VR307-1, VR307-2: VOLUME control.
    *VR301: Solid resistor on the printed circuit board.
24. DC voltage measurements are taken with electronics voltmeter from negative terminal of battery.
    < >... FM, ( )... AM, ≪ ≫... RECORD
    No mark...Playback
25. Battery current: No signal 123mA
    Maximum output (RADIO) 570mA
    Maximum output (TAPE) 1020mA

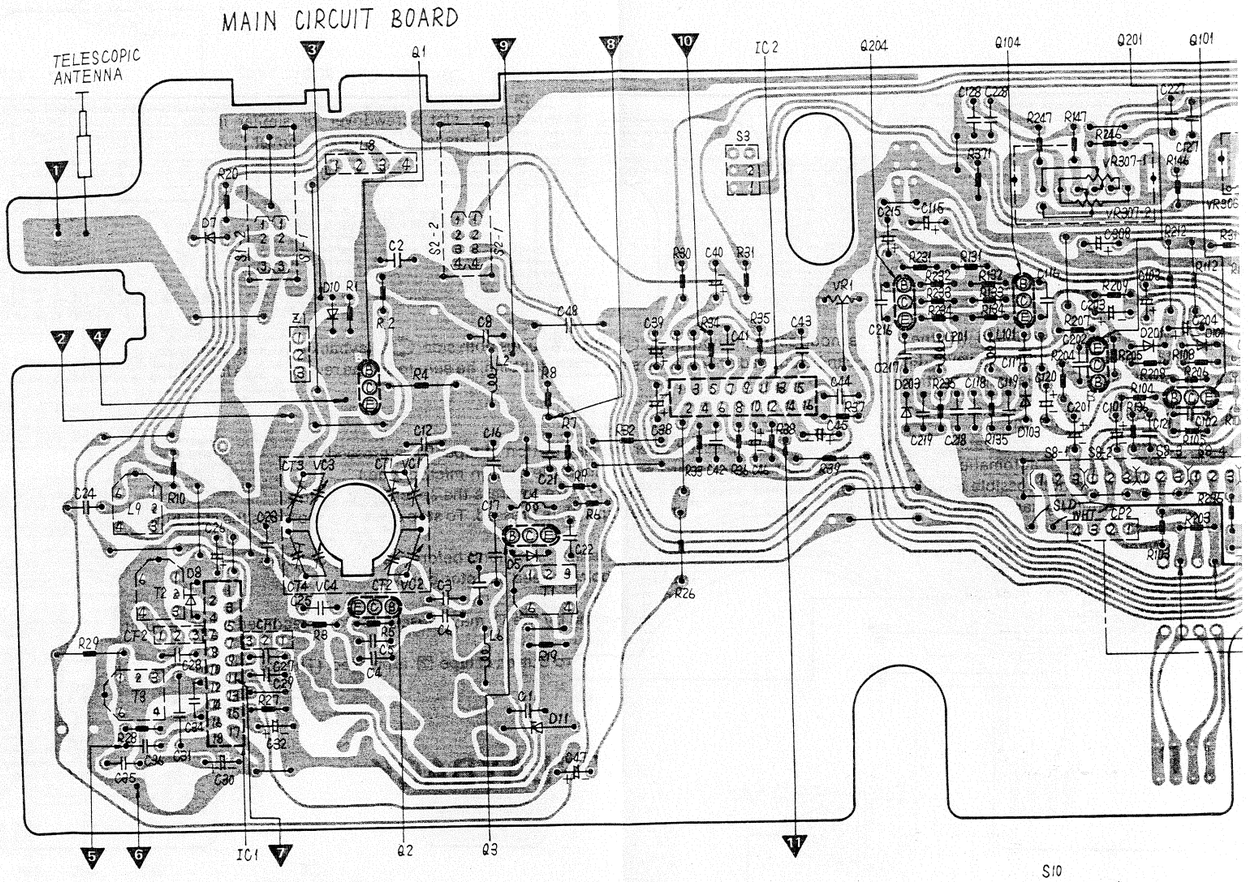
+(B) Voltage Line
Tape 1 (Playback) Signal Line
Radio (FM) Signal Line
Tape 2 (Playback) Signal Line
Tape 2 (Record) Signal Line
Main (Radio/Tape) Signal Line

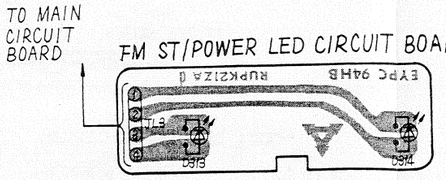
■ PARTS NO. FUNCTION NAME AND ZONE NO. SCHEMATIC DIAGRAM

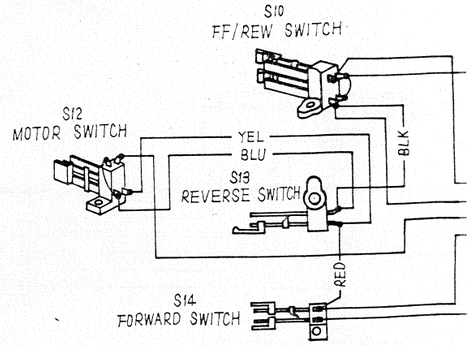
Ref. No.	Zone	Part No.	Function Name	Ref. No.	Zone	Part No.	Function Name
IC1	B · 8	BA4232L (RVIBA4232L)	FM/AM IF AMP, DET AM RF, MIX, OSC	Q312	H · 10	2SA1309R	SWITCHING
IC2	B · 10	BA1332L (RVIBA1332L)	FM MPX	D5	A · 4	MA165	AGC
IC4	E · 6	M4066BP (RVIM4066BP)	SWITCHING	D7	B · 4	MA165	SWITCHING
IC5	E · 8	AN7312	PRE AMP	D8	C · 7	MA165	AGC
IC7	G · 14	RVITC4030BP	SWITCHING	D10	B · 2	MA165	SWITCHING
IC8	F · 13	RVITC4069BP	SWITCHING	D11	B · 2	MA1068	PROTECTOR
IC9	G · 12	RVITC4011BP	SWITCHING	D101	E · 3	MA165	SWITCHING
IC10	E · 15	RVILA4508	POWER AMP	D102	E · 4	MA150 (MA161)	SWITCHING
Q1	A · 3	2SC3315C	FM RF AMP	D103	E · 9	MA165	SWITCHING
Q2	B · 2	2SC3315C	FM OSC	D201	F · 3	MA165	SWITCHING
Q3	A · 4	2SC3315C	FM MIX	D202	F · 4	MA165	SWITCHING
Q101	E · 2	2SC1740SLNS	HEAD AMP	D203	F · 9	MA165	SWITCHING
Q102	E · 4	2SC1740SLNS	HEAD AMP	D302	G · 8	MA150 (MA161)	SWITCHING
Q103	E · 4	2SC1740SR	SWITCHING	D303	F · 14	MA150 (MA161)	SWITCHING
Q104	E · 10	2SC1740SR	REC AMP	D304	G · 10	RVD47JSB2T (RVDRD4R7JB2)	REGULATOR
Q105	E · 12	2SA1309R	AMBIENCE	D305	E · 14	MA4068	REGULATOR
Q106	E · 14	2SC1740SR	MUTING	D306	H · 8	MA150 (MA161)	SWITCHING
Q201	F · 2	2SC1740SLNS	HEAD AMP	D307	H · 8	MA165	SWITCHING
Q202	F · 4	2SC1740SLNS	HEAD AMP	D308	G · 15	MA165	SWITCHING
Q203	F · 4	2SC1740SR	SWITCHING	D309	G · 15	MA165	SWITCHING
Q204	F · 10	2SC1740SR	REC AMP	D310	G · 11	MA165	SWITCHING
Q205	E · 12	2SA1309R	AMBIENCE	D311	G · 12	MA165	SWITCHING
Q206	E · 14	2SC1740SR	MUTING	D312	H · 17	MA165	SWITCHING
Q301	D · 2	2SC1740SLNS	MIXING AMP	D313	F · 17	LN216RP	FM STEREO IND
Q303	H · 2	2SC1740SR	SWITCHING	D314	F · 17	LN216RP	POWER/BATT IND
Q304	H · 3	2SC1740SR	BIAS OSC	D315	F · 17	LN330GPP	REV IND
Q306	G · 10	2SC1740SR	REGULATOR	D316	F · 17	LN330GPP	FWD IND
Q307	E · 14	2SD638R	REGULATOR	D317	D · 3	MA165	ALC
Q308	G · 16	2SC1740SR	SWITCHING	D401	G · 18	RVDSM1A02LFE (RVDSM1A02)	RECT
Q309	G · 16	2SC1317 (2SC1318-R)	SWITCHING	D402	G · 18	RVDSM1A02LFE (RVDSM1A02)	RECT
Q310	G · 16	2SC1740SR	SWITCHING	D403	G · 18	RVDSM1A02LFE (RVDSM1A02)	RECT
Q311	H · 9	2SC1740SR	SWITCHING	D404	G · 18	RVDSM1A02LFE (RVDSM1A02)	RECT

( )...Supply Parts Number





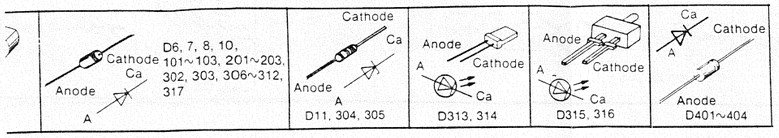


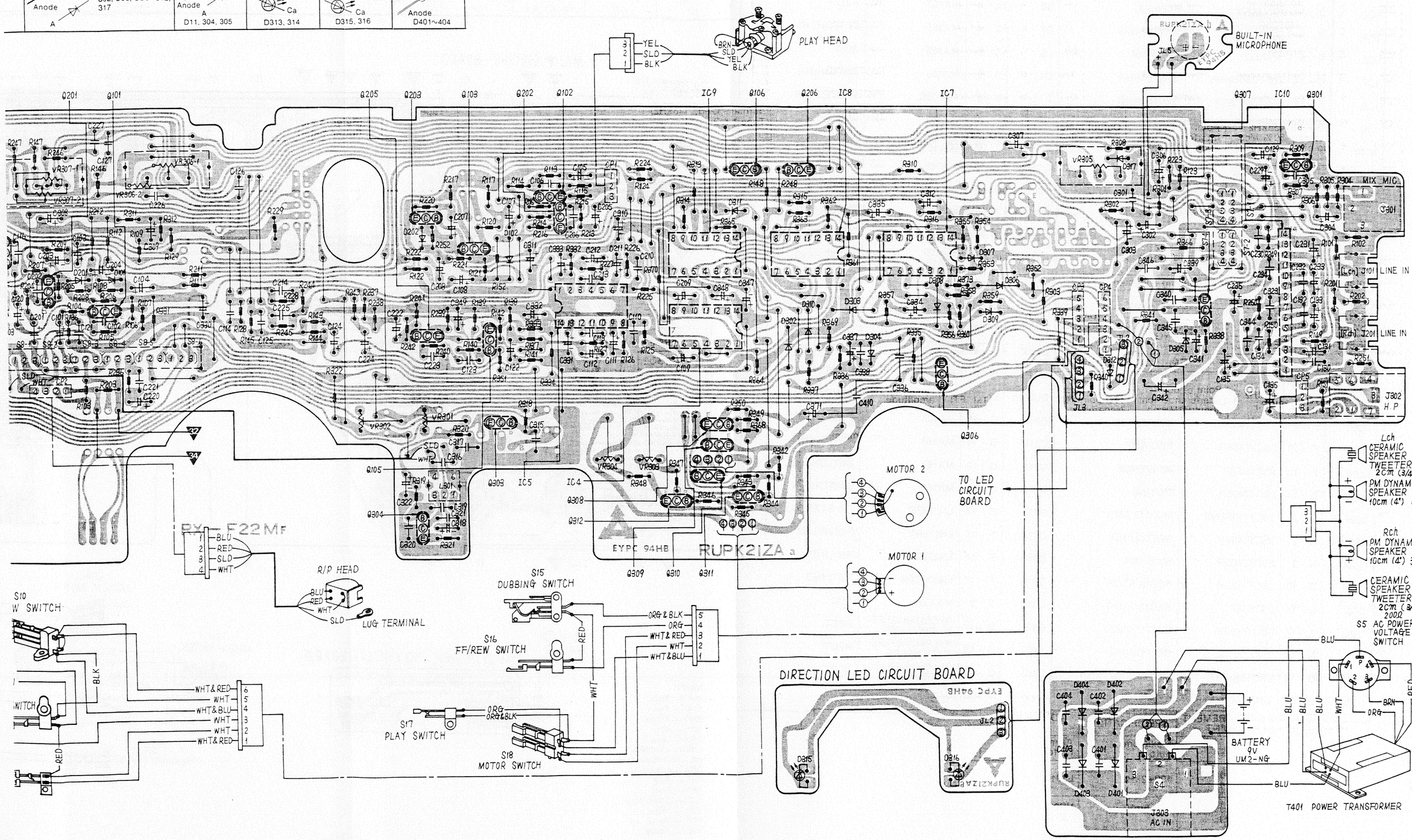


NOTES:

BLK .....Black
BLU .....Blue
BRN.....Brown
GRY.....Gray
GRN .....Green
L. BLU ....Light Blue
NIL.....No Color Mark
ORG .....Orange
PNK.....Pink
RED.....Red
SLD .....Shield Wire
VLT.....Violet
WHT .....White
YEL.....Yellow

CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM





MEASUREMENTS AND ADJUSTMENTS

■ ALIGNMENT INSTRUCTION

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

1. Set volume control to maximum.
2. Set tone control to treble.
3. Set band switch to AM or FM.
4. Set function selector to radio.
5. Set power source voltage to 9V DC.
6. Output of signal generator should be no higher than necessary to obtain an output reading.

■ AM ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR CONNECTIONS	SIGNAL GENERATOR or SWEEP GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		AM-IF ALIGNMENT					
(1)	AM	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455kHz 30% Mod. at 400Hz	Point of non-interference. (on/ about 600kHz)	Output meter across voice coil.	T2 (AM IFT)	Adjust for maximum output.
		AM-RF ALIGNMENT					
(2)	AM	〃	550kHz	550kHz (Refer to Fig. 4)	Output meter across voice coil.	L9 (AM OSC Coil) (*1) L8 (AM ANT Coil)	Adjust for maximum output. Adjust L8 by moving coil bobbin along ferrite core.
(3)	AM	〃	1,500kHz	1,500kHz (Refer to Fig. 4)	〃	CT4 (AM OSC Trimmer) CT3 (AM ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).

(*1) Cement antenna bobbin with wax after completing alignment.

■ FM ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR CONNECTIONS	SIGNAL GENERATOR or SWEEP GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		FM-IF ALIGNMENT					
(1)	FM	Connect to test point ⑧ through 0.001μF. Negative side to test point ⑨.	10.7MHz (SWP.)	Point of non-interference. (on/ about 90MHz)	Connect vert. amp. of scope to test point ⑦. Negative side to test point ⑥.	T1 (FM 1st IFT)	Adjust for maximum amplitude. (Refer to fig. 1.)
(2)	FM	〃	〃	〃	〃	T3 (FM 2nd IFT)	Adjust for maximum amplitude. (Refer to fig. 2.)
		FM-RF ALIGNMENT					
(3)	FM	Connect to test point ③ through FM dummy antenna. Negative side to test point ④.	90MHz	90MHz (Refer to Fig. 4)	Output meter across voice coil.	L6 (FM OSC Coil) L2 (FM ANT Coil)	(*2) Adjust for maximum output.
(4)	FM		106MHz	106MHz (Refer to Fig. 4)	〃	CT2 (FM OSC Trimmer) CT1 (FM ANT Trimmer)	(*2) Adjust for maximum output. Repeat steps (3) and (4).

(*2) Three output responses will be present; proper tuning is the center frequency.

■ SEPARATION ALIGNMENT

ITEM	FM SIGNAL GENERATOR SOURCE CONNECTION	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	SPECIFICATION	REMARKS
Adjustment of pilot signal.	92MHz, 60dB	⑪ ...(+) ⑩ ...(−)	VR1	19kHz	Adjust VR1, for 19kHz (±100Hz) reading on electronics counter.

■ AUDIO ADJUSTMENT

ITEM	INPUT	MEASUREMENT POINT	SPECIFICATION	ADJUSTMENT POINT	REMARKS
Azimuth	QZZCFM (8kHz, −20dB)	EXT SP	Maximum output.	Azimuth screw (Refer to Fig. 5, 6)	Playback mode
Bias oscillation frequency	——	⑫ ...(+) ⑭ ...(−)	100±2kHz	L301	Record mode Beat proof switch → II
Bias current	——	⑫ ...(+) ⑭ ...(−)	4.5±5mV	VR302	Record mode Beat proof switch → II

■ TAPE SPEED ADJUSTMENT

ITEM	FM SIGNAL GENERATOR SOURCE CONNECTION	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	REMARKS
Tape speed adjustment for high speed. Tape 1 & 2	QZZCWAT (3kHz) Use QZZCS023 (1.5kHz) tape when using a wow/flutter meter.	Headphone Jack	VR304 (Tape 1)	1. Short Shorting hole by (−) driver above to enter the hight speed mode. (See Fig. 7) Tape 1...6030±30Hz Tape 2...−60±30Hz of tape speed of tape 1. (Refer to Fig. 8 & 9 when using a wow/flutter meter)
Tape speed adjustment for normal speed. Tape 1 & 2	QZZCWAT (3kHz)	Headphone Jack	VR303 (Tape 1)	1. Open Shorting hole and set the tape speed to normal. 2. Tape 1...3015±15Hz Tape 2...−30±15Hz of the speed of tape 1. (Refer to Fig. 8 & 9 when using a wow/flutter meter)

■ ALIGNMENT POINT

Fig. 1

Fig. 2

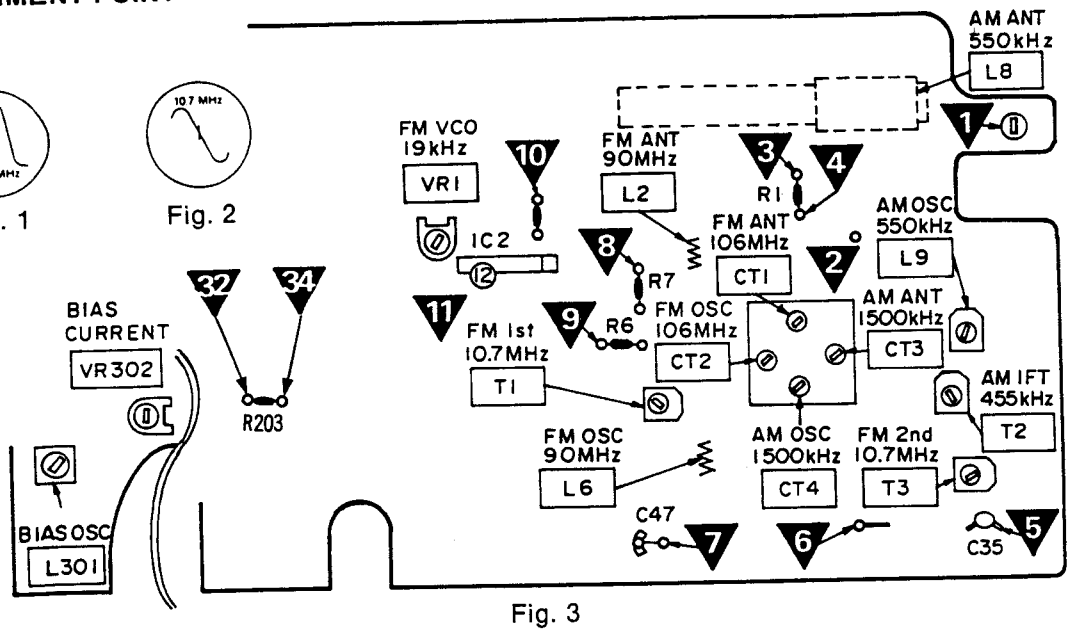


Fig. 3

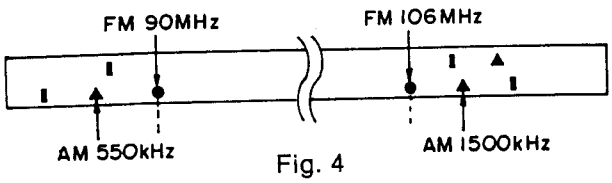
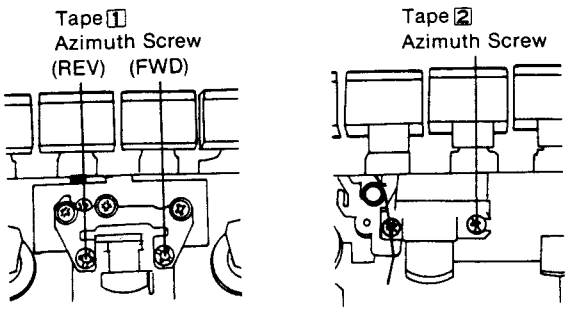


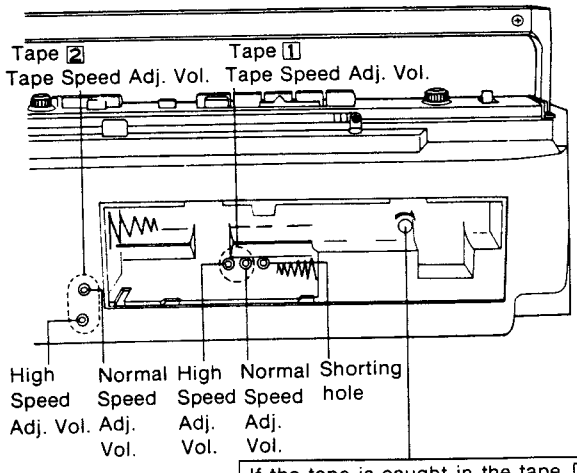
Fig. 4



The azimuth for both tapes 1 and 2 can be adjusted without removing the front cabinet.

Fig. 5

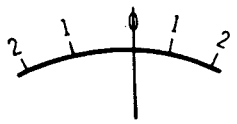
Fig. 6



If the tape is caught in the tape 1 pinch rollers, rotate the pulley in the direction of the arrow using a straight slot screwdriver or similar instrument. This facilitates tape removal.

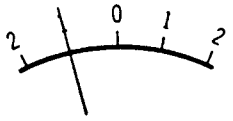
Fig. 7

● NEEDLE POSITION OF THE WOW/FLUTTER METER



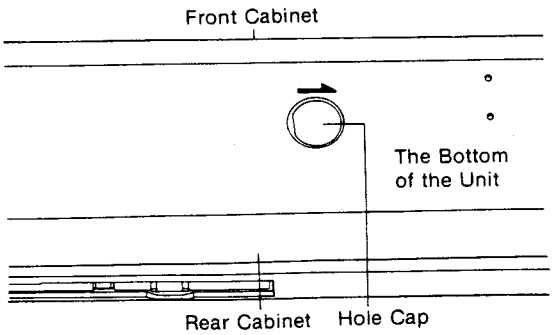
Tape 1

Fig. 8



Tape 2

Fig. 9



If the tape is caught in the tape 2 pinch rollers, remove the hole cap and rotate the pulley in the direction of the arrow using a straight slot screwdriver or similar instrument. This facilitates tape removal.

Fig. 10

DUBBING

When tape 1 is dubbed with the reverse mode set to the both side ⊂ or continuous both side ⊂⊃ playback positions, both sides of the tape are played back. However, tape 2 can be dubbed only on one side. When dubbing, be sure to set the reverse mode for tape 1 in the single side ⇄ playback position.

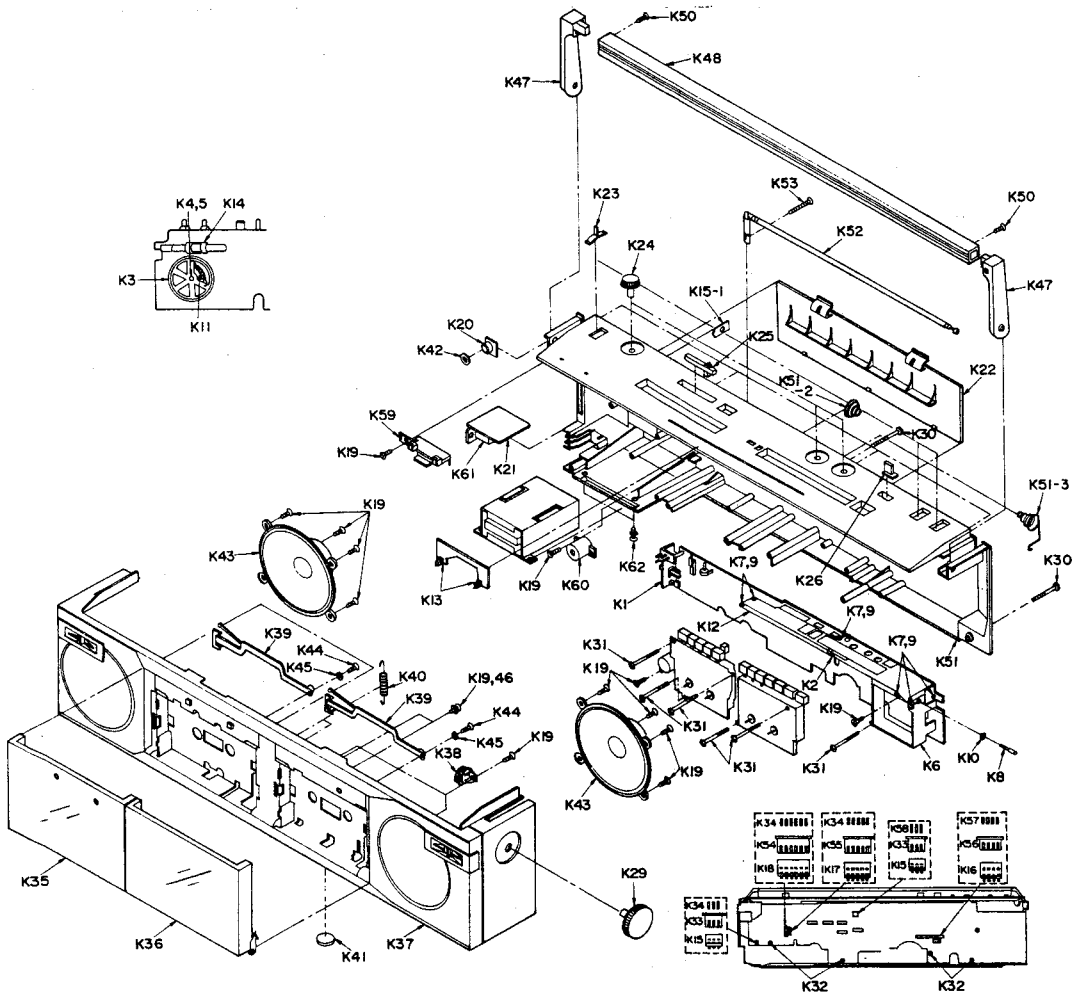
Dubbing precautions

- Tape 2 will not operate even if its record button is pressed after the play button of tape 1 is pressed. (After tape 1 automatically stops, tape 2 is ready to record sound from the built-in microphone.)
- Dubbing is not possible even if the record button is pressed. To dub, be sure to press the special dub button.
- When dubbing, tape 2 does not stop even when the stop button of tape 1 is pressed. To stop dubbing, also press the stop button for tape 2 .
- When dubbing is stopped by pressing the dubbing button, wait for at least one second before resuming dubbing.
- When dubbing, do not change the dubbing speed by pressing the dubbing speed selector button.
- When dubbing, never connect a microphone to the mixing mic terminal.
- When the unit is brought near a TV set during dubbing, radio waves emitted by the TV may cause noise to be recorded. Keep the unit at least 1.5 meters from a TV set.
- Dubbing is not possible if the play button of tape 1 is pressed after the record button of tape 2 is pressed. (The sound from the built-in microphone is recorded on tape 2 .)

PRECAUTIONS DURING RELAY PLAYBACK

- Set the reverse mode selector switch to the ⇄ or ⊂ position. If it is set to the ⊂⊃ position, both sides of tape 1 will be continuously played back and tape 2 will not be played back at all.
- Never press the tape 1 and tape 2 play buttons simultaneously. Never lightly press the FF or rewind button while the tape 2 play button is held down. This may cause the cassette holder cover to remain closed.
- When tape 1 is in the play mode, tape 2 cannot be played even if its play button is pressed.
- Tape 1 is always has priority regardless of whether the play button of tape 1 or the play button of tape 2 is pressed first. When the reverse mode is set to the ⇄ or ⊂ position, however, relay playback is possible between tape 1 and tape 2.
- Procedure for Disassembling Main Mechanism Components.

CABINET PARTS LOCATION



REPLACEMENT PARTS LIST

Important safety notice
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

[MZ]...For Audio Club.

Ref. No.	Part No.	Part Name & Description
		CABINET PARTS
K 1	RKE2Z2	Jack Board
K 2	RDP295Z	Dial Pointer
K 3	RDD158Z	Dial Drum
K 4	XSN26+6	Screw, Dial Drum M'tg
K 5	XWG26	Washer, Dial Drum M'tg
K 6	RZAXF22J	Dial Chassis
K 7	QDP1477	Roller-A
K 8	RDT9147Z	Tuning Shaft
K 9	RDY47Z	Roller Shaft
K 10	XUC3FT	Stop Ring, Tuning Shaft M'tg
K 11	QBT1320	Spring, Dial Drum
K 12	RZZ0303	Dial Cord
K 13	RHR1280Z	LED Holder
K 14	RHR1281Z	Holder, AM ANT
K 15	QJP03S005T	Plug (3P), CP 1, 5
K 16	RJP4G4Z	Plug (4P), CP 2
K 17	QJP05S005T	Plug (5P), CP 3
K 18	QJP06S005T	Plug (6P), CP 4
K 19	XTN3+8G	Screw, Holder M'tg AM Antenna Holder, Speaker M'tg ⊕3×8 Cassette Holder M'tg Speaker M'tg
K 20	RJM151Z	Condenser Microphone
K 21	RUPK21Z	Power P.C.B
K 22	RKK297Z7	Battery Cover
K 23	RBS230Z	Knob, BAND, MODE, FUNCTION
K 24	RBN731Z	Knob, VOLUME, TONE, MIX
K 25	RBD341Z	Knob, REV MODE
K 26	RBC758Z	Button, DUBBING SPEED
K 29	RBN709Z	Knob, TUNING
K 30	XTN3+55GY	Screw, Cabinet M'tg
K 31	XTN3+50G	Screw, MECHA, Dial CHASSIS M'tg
K 32	XTV3+10G	Screw, MECHA, P.C.B M'tg
K 33	QJS03001T	Socket (3P), CS 1, 5
K 34	QJT1089	Contact, Socket
K 35	QYFK0336	Cassette Holder Ass'y (L)
K 36	QYFK0337	Cassette Holder Ass'y (R)
K 37	RYMXF22MF8	Front Cabinet Ass'y
K 38	QYQK0176	Gear, Cassette Holder
K 39	RUB398Z	Eject Lever
K 40	RUW41Z	Spring, Eject Lever
K 41	RUV714Z3	Cap
K 42	RHG720Z	Rubber Cushion, MIC
K 43	EAS10P241SD	Speaker, 10cm, 3Ω
K 44	XTN3+6B	Screw, Eject Lever M'tg
K 45	XWG3	Washer, Eject Lever M'tg
K 46	XWG3F12	Washer, Cassette Lid M'tg
K 47	RKX334Z	Arm, Handle
K 48	RYHXF22M2	Handle Ass'y
K 50	XTN3+8GY	Screw, Handle M'tg
K 51	RYFXF22MF7	Rear Cabinet Ass'y
K 51-1	QJB0111	Battery Terminal (+)
K 51-2	QBN8007	Battery Terminal (−)
K 51-3	RCJ993Z	Battery Spring (+/−)
K 52	XEARR225DAK	Telescopic ANT
K 53	XSN3+25S	Screw, Telescopic ANT M'tg
K 54	QJS06001	Socket, 6 Pin (CS4)
K 55	QJS05001	Socket, 5 Pin (CS3)
K 56	RJS4L3Z	Socket, 4 Pin (CS2)
K 57	RJT707Z	Contact (Socket)
K 58	RJT1028Z	Contact (Socket)
K 59	RMPK3Z	Holder, LED Circuit Board
K 60	RUV387Z	Cover, Voltage Selector ⚠
K 61	RUV482Z	Cover, AC Socket ⚠
K 62	XSN3+8BVS	Screw, Power Transformer M'tg
		ACCESSORIES
A 1	RJA22X	Power Cord, AC ⚠
A 2	RQX5015Z	Instruction Book
A 3 [MZ]	RJP120ZS	AC Plug Adaptor ⚠
		PACKINGS
P 1	RPK2015Z	Gift Box
P 2	RPN9491Z	Pad Complete
P 3	XZB65X35A01	Polyethylene Cover
P 4	RPEK102Z	Sheet
P 5	XZB10X30A02	Polyethylene Cover (AC Cord)

DISASSEMBLY INSTRUCTION OF MECHANISM MAIN PARTS TAPE [1]

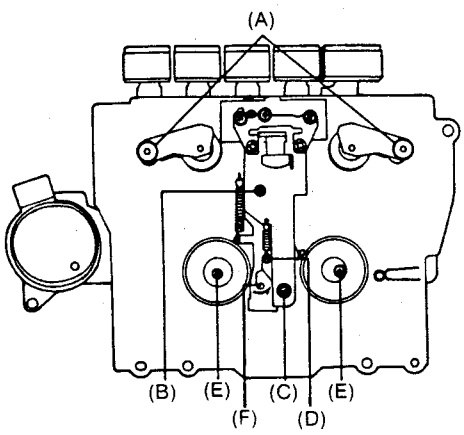


Fig. 1

■ TO REMOVE THE PINCH ROLLER

1) Remove poly-slider washers (A) and pull out the pinch rollers. (See Fig. 1)

■ TO REMOVE THE HEAD BASE PLATE

1) Remove the screw (B) (2×3)mm×1. (See Fig. 1)
2) Remove the screw (C) (2×5)mm×1. (See Fig. 1)
3) Remove the spring (D)×1. (See Fig. 1)

■ TO REMOVE THE REEL TABLE

1) Remove poly-slider washers (E). This may cause the reel caps to pop out so be careful. (See Fig. 1)
2) Push brake plate (F) in the direction of the arrow and pull the reel table. (See Fig. 1)

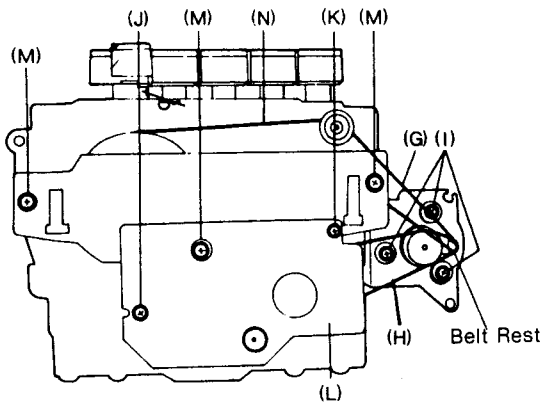


Fig. 2

■ TO REMOVE THE DC MOTOR

1) Temporarily fasten the capstan belt (G) and relay belt (H) via the belt rest. (See Fig. 2)
2) Remove the Motor M'tg screws (I) (2.6×8)mm×3. (See Fig. 2)

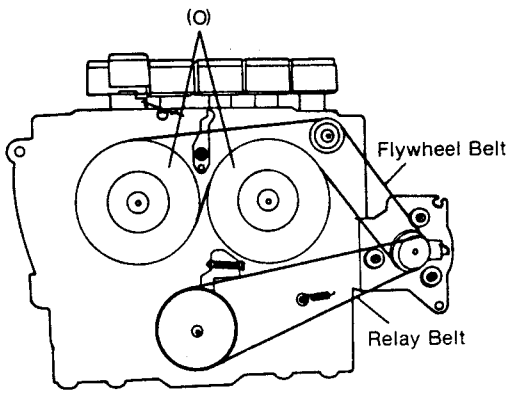


Fig. 3

■ TO REMOVE THE RELAY BELT

1) Remove the screw (J) (2.6×13)mm×1 and screw (K) (2×5)mm×1 (See Fig. 2)
2) Remove the shield plate (L).
3) Remove the relay belt (H). (See Figs. 2 and 3)

■ TO REMOVE THE FLYWHEEL BELT

1) Remove the screw (M) (2.6×8)mm×3. (See Fig. 2)
2) Remove the flywheel bracket (N). (See Fig. 2)
3) Remove the flywheel belt (G). (See Figs. 2 and 3)

■ TO REMOVE THE FLYWHEEL

1) Remove capstan belt (G) and pull out flywheels (O) as shown in Fig. 3.
(Note that each flywheel is attached with a washer.)

DISASSEMBLY INSTRUCTION OF MECHANISM MAIN PARTS TAPE [2]

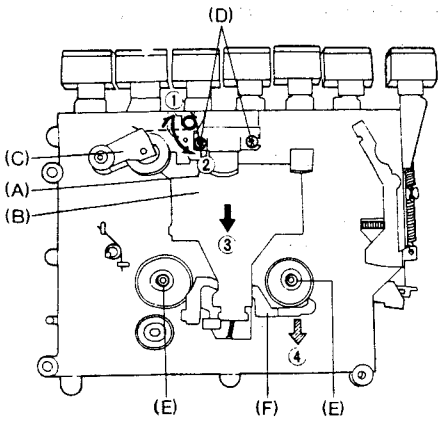


Fig. 4

■ TO REMOVE THE PINCH ROLLER

1) Lift spring (A) in the direction of arrow ① and remove it in the direction of arrow ②. (See Fig. 4)
2) Pull out pinch roller (C) while pushing the head Base Plate in the direction of arrow (3). (See Fig. 4)

■ TO REMOVE THE R/P HEAD

1) Remove the screw (D) (2×6)mm×2. (See Fig. 4)

■ TO REMOVE THE REEL TABLE

1) Remove the poly-washer (E). (See Fig. 4)
2) Pull out the reeltable while pushing the brake plate (F) in the direction of arrow ④. (See Fig. 4)

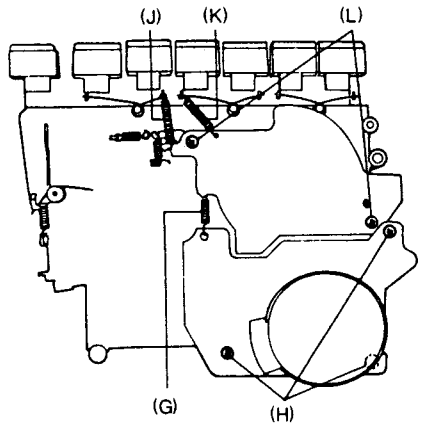


Fig. 5

■ TO REMOVE THE DC MOTOR

1) Remove the spring (G). (See Fig. 5)
2) Remove the screw (H) (2.6×8)mm×3. (See Fig. 5)
3) Remove the screw (I) (2.6×6)mm×2. (See Fig. 6)

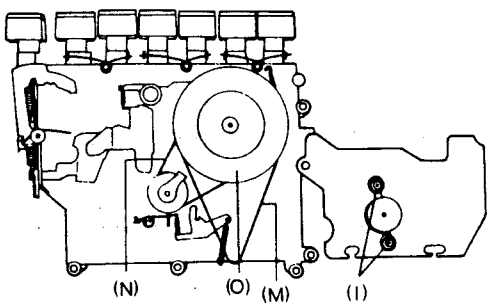


Fig. 6

■ TO REMOVE THE FLYWHEEL

1) Remove the spring (J) and (K). (See Fig. 5)
2) Remove the screw (L) (2.6×10)mm×2. (See Fig. 5)
3) Remove the relay belt (M) and (N). (See Fig. 6)
4) Remove the flywheel (O). (See Fig. 6)
(Note that when flywheel (O) is removed, the washer and spring will come off together.)

D

MECHANISM PARTS LOCATION (Tape [1] · Playback only)

REPLACEMENT PARTS LIST

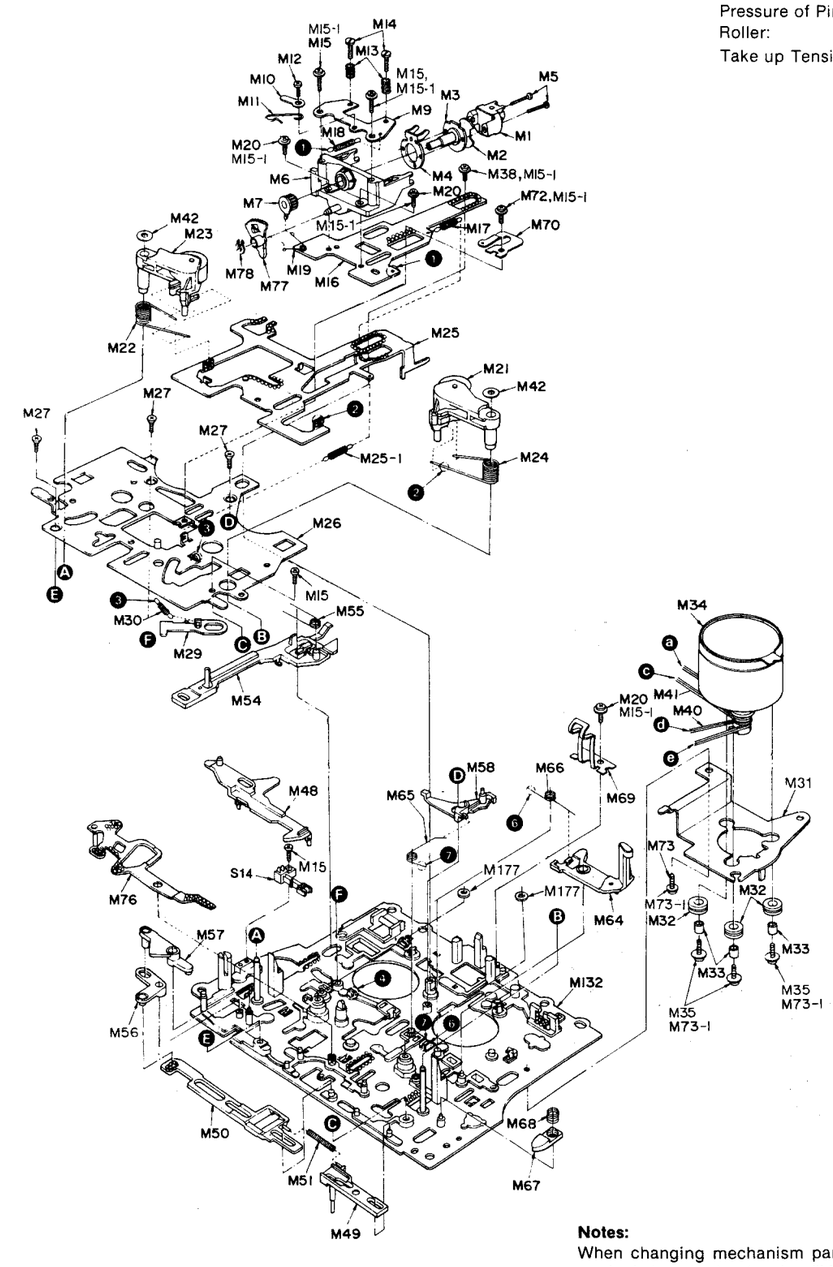
Ref. No.	Part No.	Part Name & Description
		MECHANICAL PARTS
Tape [1]		
M 1	RJH4C07XZ	Playback Head
M 2	QMF2362	Bracket
M 3	QDP2023	Head Bobbin
M 4	QMA4860	Fixer, Head
M 5	XQN16+C8	Screw, R/P Head M'tg ⊕1.6×8
M 6	QXZ0083	Head Case Ass'y
M 7	QDG1377	Gear (B), Head
M 9	QMF2358	Plate, Azimuth
M 10	QJT0039	Lug Terminal
M 11	QBN2115	Spring, Head Lead Protector
M 12	XTN2+3B	Screw, Azimuth Plate M'tg ⊕2×3
M 13	QBC8022	Spring, Azimuth Adjustment
M 14	QHQ1376	Screw, Azimuth Adjustment
M 15	XTN2+8B	Tapping Screw, Shield Plate etc. M'tg
M 15-1	XWG2	Washer, Shield Plate etc, M'tg
M 16	QMK2181	Head Base
M 17	QBT2067	Spring, Head Base
M 18	QBT2087	Spring, Head Earth
M 19	QBN2114	Spring, Head Revolving
M 20	XTN2+6B	Tapping Screw, Head Case M'tg
M 21	QXL1800	Pinch Roller (R) Ass'y
M 22	QBN2104	Spring, Pinch Roller (R)
M 23	QXL1801	Pinch Roller (L) Ass'y
M 24	QBN2105	Spring, Pinch Roller (L)
M 25	QXK3021	Operation Plate
M 25-1	QBT2078	Spring, Operation Plate
M 26	QXK3031	Main Guide Plate
M 27	XTS2+6B	Screw, Main Guide Plate M'tg
M 29	QML4210	Lever, STOP/EJECT Change
M 30	QBT1989	Spring, Auto Stop Drive Lever
M 31	QMA4892	Angle, Motor
M 32	QBG1373	Motor Rubber
M 33	QMSK0071	Pipe, Motor Ass'y
M 34	QXUK1003	DC Motor Ass'y
M 35	XSN26+6	Screw, Motor Ass'y M'tg
M 38	XTN2+5B	Tapping Screw, Head Base etc. M'tg
M 40	QDB0384	Belt, Relay
M 41	QDB0387	Belt, Flywheel
M 42	QBW2046	Washer, Pinch Roller Bracket M'tg
M 48	QML4219	Lever, Playback Pause Action
M 49	QML4204	Lever, Reverse Instruction
M 50	QML4220	Lever, Revolving Move
M 51	QBC1515	Spring, Reverse
M 54	QML4223	Lever, Idler Change
M 55	QBN2112	Spring, Idler Change Lever
M 56	QML4208	Lever, Reverse
M 57	QML4200	Lever, Reverse Change
M 58	QML4225	Brake Plate
M 59	QML4214	Lever, TPS Lock
M 60	XSS2+6	Screw, Plunger Plate M'tg
M 61	QMF2363	Plunger Plate
M 62	XNG2E	Nut, TPS Lock Lever M'tg
M 63	QBT2080	Spring, TPS Lock Lever
M 64	QML4198	Lever, Eject
M 65	QBN2103	Spring, Brake Plate
M 66	QBN2107	Spring, Eject
M 67	QML4231	Lever, Pause Lock
M 68	QBC1436	Spring, Pause Lock Lever
M 69	QBP2036	Spring, Cassette Tape Pressure
M 70	QBP2037	Spring, Head Plate
M 72	XTN2+3B	Screw, Head Plate Spring M'tg
M 73	XTN26+6B	Tapping Screw, Plunger etc. M'tg
M 73-1	XWG26	Washer, Plunger etc. M'tg
M 76	QXL1782	Lever, Reverse Start (A)
M 77	QXG1376	Gear, Head Revolving
M 78	XUEV25V	Circlip, Record Reverse Lever etc. M'tg
M 90	QXRK1010	Pause Button Rod Ass'y
M 91	QBT2068	Spring, FF Button Rod Ass'y
M 92	QXRK1011	FF Button Rod Ass'y
M 93	QBT2068	Spring, Rewind Button Rod Ass'y
M 94	QXRK1012	Rewind Button Rod Ass'y
M 95	QBT2069	Spring, Playback Button Rod Ass'y
M 96	QXRK1013	Playback Button Rod Ass'y
M 99	QXRX1014	Stop/Eject Button Rod Ass'y
M 100	QXRK1015	Direction Button Rod Ass'y
M 101	QBT2068	Spring, Lever
M 102	QML4216	Lever, Midterm Instruction
M 103	QXR1078	Lock Rod Ass'y
M 104	QXLK1001	Lever Ass'y, Reverse Lever
M 104-1	QBT2070	Spring, Reverse Record Lever Ass'y
M 105	QML4209	Lever, Full Auto Stop error Prevention
M 106	QBT2073	Spring, Full Auto Stop error Prevention Lever
M 107	QXP0663	Idler Pulley
M 108	QML4199	Lever, Idler Pulley
M 110	QBN2119	Spring, Idler Lever
M 111	QML4222	Lever, FF
M 112	QBT2071	Spring, FF Lever
M 113	QDG1380	Gear, FF
M 115	QXL1793	Lever Ass'y, Reverse Start
M 115-1	QBT2079	Spring, Reverse Start Lever Ass'y
M 116	QML4190	Lever, Reverse Start (B)
M 117	QBT2075	Spring, Reverse Start Lever (B)
M 118	QML4212	Lever, Playback Start
M 119	QBT2072	Spring, Playback Start Lever
M 122	QML4213	Lever, Auto Stop Detector Drive
M 123	QBT2077	Spring, Auto Stop Detector Drive Lever
M 124	QXL1798	Lever, Auto Stop Move
M 124-1	QBT2076	Spring, Auto Stop Move Lever
M 127	QXD0167	Take Up Reel Table Ass'y
M 128	QXD0169	Supply Reel Table Ass'y
M 129	QML4207	Lever, Leaf Switch Operation
M 131	QBN2110	Spring, Stop Rod
M 132	QXKK1031	Mechanism Chassis Ass'y
M 135	QDG1381	Gear, Slow Down
M 136	QDG1379	Gear, Idler
M 137	QBW2030	Washer, Slow down Gear M'tg φ1.5
M 138	QML4187	Lever, Head Base Release
M 139	QML4186	Lever, Switch ON
M 140	QDG1384	Gear, Reverse Start
M 141	QSF0029	Magnet
M 142	QBJ3220	Washer, Supply Reel Table M'tg
M 143	QBC8025	Spring, Supply Reel Table
M 144	QBC8024	Spring, Supply Reel
M 145	QDP2024	Reel Cap
M 146	QBW2008	Washer, Reel Cap etc. M'tg
M 147	QDG1386	Gear, Pause, Cue
M 148	QDG1385	Gear, Main
M 149	QDG1383	Gear, Reverse
M 150	QML4202	Lever, Idler Control
M 151	QXK3029	Sub Chassis Ass'y
M 152	QML4201	Lever, Pause
M 153	QBN2108	Spring, Pause Lever
M 155	QDP2027	Pulley, Relay
M 156	QML4188	Lever, Reverse Mode Change
M 157	QMF2357	Bracket, Reverse Mode Change Lever
M 158	QBP2038	Spring, Reverse Mode Change Lever
M 159	QBN2109	Spring, Manual Reverse Rod
M 160	QML4197	Lever, Reverse Moving
M 161	QMF2359	Holding Plate
M 162	QDG1378	Gear, Auto Stop
M 163	QDP2025	Pulley, Relay
M 164	QXF0250	Flywheel Ass'y
M 165	QMF2361	Flywheel Bracket (B)
M 166	QBW2016	Washer, Auto Stop Gear
M 167	QBW2136	Washer, Flywheel Ass'y
M 168	RMCK4Z	Shield Plate
M 169	XTN26+8B	Screw, Reverse Lever Plate etc. M'tg ⊕2.6×8
M 171	XTN26+13B	Screw, Head Plate M'tg ⊕2.6×8
M 172	XTN26+16B	Screw, Sub Plate M'tg ⊕2.6×1.6
M 173	QBC1517	Spring, Capstan
M 174	XUEV3V	Circlip, Auto Stop Gear
M 175	QWQT0005	Washer, Middle Pulley
M 177	QBW2007	Washer

MECHANISM PARTS LOCATION (Tape [1] · Playback only)

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description
		MECHANICAL PARTS
Tape [1]		
M 1	**RJH4C07XZ**	Playback Head
M 2	**QMF2362**	Bracket
M 3	**QDP2023**	Head Bobbin
M 4	**QMA4860**	Fixer, Head
M 5	**XQN16+C8**	Screw, R/P Head M'tg ⊕1.6×8
M 6	**QXZ0083**	Head Case Ass'y
M 7	**QDG1377**	Gear (B), Head
M 9	**QMF2358**	Plate, Azimuth
M 10	**QJT0039**	Lug Terminal
M 11	**QBN2115**	Spring, Head Lead Protector
M 12	**XTN2+3B**	Screw, Azimuth Plate M'tg ⊕2×3
M 13	**QBC8022**	Spring, Azimuth Adjustment
M 14	**QHQ1376**	Screw, Azimuth Adjustment
M 15	**XTN2+8B**	Tapping Screw, Shield Plate etc. M'tg
M 15-1	**XWG2**	Washer, Shield Plate etc, M'tg
M 16	**QMK2181**	Head Base
M 17	**QBT2067**	Spring, Head Base
M 18	**QBT2087**	Spring, Head Earth
M 19	**QBN2114**	Spring, Head Revolving
M 20	**XTW2+6L**	Tapping Screw, Head Case M'tg
M 21	**QXL1800K**	Pinch Roller (R) Ass'y
M 22	**QBN2104**	Spring, Pinch Roller (L)
M 23	**QXL1801K**	Pinch Roller (L) Ass'y
M 24	**QBN2105**	Spring, Pinch Roller (R)
M 25	**QXK3021**	Operation Plate
M 25-1	**QBT2078**	Spring, Operation Plate
M 26	**QXK3031**	Main Guide Plate
M 27	**XTS2+6B**	Screw, Main Guide Plate M'tg
M 29	**QML4210**	Lever, STOP/EJECT Change
M 30	**QBT1989**	Spring, Auto Stop Drive Lever
M 31	**QMA4892**	Angle, Motor
M 32	**QBG1373**	Motor Rubber
M 33	**QMSK0071**	Pipe, Motor Ass'y
M 34	**QXUK1003**	DC Motor Ass'y with Pulley
M 35	**XSN26+6**	Screw, Motor Ass'y M'tg
M 38	**XTN2+5B**	Tapping Screw, Head Base etc. M'tg
M 40	**QDB0384**	Belt, Relay
M 41	**QDB0387**	Belt, Flywheel
M 42	**QBW2046K**	Washer, Pinch Roller Bracket M'tg
M 48	**QML4219**	Lever, Playback Pause Action
M 49	**QML4204**	Lever, Reverse Instruction
M 50	**QML4220**	Lever, Revolving Move
M 51	**QBC1515**	Spring, Reverse Instruction
M 54	**QML4223**	Lever, Idler Change
M 55	**QBN2112**	Spring, Idler Change Lever
M 56	**QML4208**	Lever, Reverse
M 57	**QML4200**	Lever, Reverse Change
M 58	**QML4225**	Brake Plate
M 64	**QML4198**	Lever, Eject
M 65	**QBN2103**	Spring, Brake Plate
M 66	**QBN2107**	Spring, Eject
M 67	**QML4231**	Lever, Pause Lock
M 68	**QBC1436**	Spring, Pause Lock Lever
M 69	**QBP2036**	Spring, Cassette Tape Pressure
M 70	**QBP2037**	Spring, Head Plate
M 72	**XTN2+3B**	Screw, Head Plate Spring M'tg
M 73	**XTN26+6B**	Tapping Screw, Motor Angle M'tg
M 73-1	**XWG26**	Washer, Motor Angle M'tg
M 76	**QXL1782**	Lever, Reverse Start (A)
M 77	**QDG1376**	Gear, Head Revolving
M 78	**XUEV25V**	Circlip, Record Reverse Lever etc. M'tg
M 90	**QXRK1010**	Pause Button Rod Ass'y
M 91	**QBT2068**	Spring, FF Button Rod Ass'y
M 92	**QXRK1035**	FF Button Rod Ass'y
M 93	**QBT2068**	Spring, Rewind Button Rod Ass'y
M 94	**QXRK1036**	Rewind Button Rod Ass'y
M 95	**QBT2069**	Spring, Playback Button Rod Ass'y
M 96	**QXRK1013**	Playback Button Rod Ass'y
M 99	**QXRX1014**	Stop/Eject Button Rod Ass'y
M 100	**QXRK1015**	Direction Button Rod Ass'y
M 101	**QBT2068**	Spring, Midterm Instruction
M 102	**QML4216**	Lever, Midterm Instruction
M 103	**QXR1078**	Lock Rod Ass'y
M 104	**QXLK1001**	Lever Ass'y, Reverse Record
M 104-1	**QBT2070**	Spring, Reverse Record Lever Ass'y
M 105	**QML4209**	Lever, Full Auto Stop error Prevention
M 106	**QBT2073**	Spring, Full Auto Stop error Prevention Lever
M 107	**QXP0663**	Idler Pulley
M 108	**QML4199**	Lever, Idler Pulley
M 110	**QBN2119**	Spring, Idler Lever
M 111	**QML4222**	Lever, FF
M 112	**QBT2071**	Spring, FF Lever
M 113	**QDG1380**	Gear, FF
M 115	**QXL1793**	Lever Ass'y, Reverse Start
M 115-1	**QBT2079**	Spring, Reverse Start Lever Ass'y
M 116	**QML4190**	Lever, Reverse Start (B)
M 117	**QBT2075**	Spring, Reverse Start Lever (B)
M 118	**QML4212**	Lever, Playback Start
M 119	**QBT2072**	Spring, Playback Start Lever
M 122	**QML4213**	Lever, Auto Stop Detector Drive
M 123	**QBT2077**	Spring, Auto Stop Detector Drive Lever
M 124	**QXL1798**	Lever, Auto Stop Move
M 124-1	**QBT2076**	Spring, Auto Stop Move Lever
M 127	**QXD0167**	Take Up Reel Table Ass'y
M 128	**QXD0169**	Supply Reel Table Ass'y
M 129	**QML4207**	Lever, Leaf Switch Operation
M 131	**QBN2110**	Spring, Stop Rod
M 132	**QXKK1031**	Mechanism Chassis Ass'y
M 135	**QDG1381**	Gear, Slow Down
M 136	**QDG1379**	Gear, Idler
M 137	**QBW2030**	Washer, Slow down Gear M'tg φ1.5
M 138	**QML4187**	Lever, Head Base Release
M 139	**QML4186**	Lever, Switch ON
M 140	**QDG1384**	Gear, Reverse Start
M 142	**QBJ3220**	Washer, Supply Reel Table M'tg
M 143	**QBC8025**	Spring, Supply Reel Table
M 144	**QBC8024**	Spring, Supply Reel
M 145	**QDP2024**	Reel Cap
M 146	**QBW2008**	Washer, Reel Cap etc. M'tg
M 147	**QDG1386**	Gear, Pause/Cue
M 148	**QDG1385**	Gear, Main
M 149	**QDG1383**	Gear, Reverse
M 150	**QML4202**	Lever, Idler Control
M 151	**QXK3029**	Sub Chassis Ass'y
M 152	**QML4201**	Lever, Pause Start
M 153	**QBN2108**	Spring, Pause Start
M 155	**QDP2027**	Pulley, Relay
M 156	**QML4188**	Lever, Reverse Mode Change
M 157	**QMF2357**	Bracket, Reverse Mode Change Lever
M 158	**QBP2038**	Spring, Reverse Mode Change Lever
M 159	**QBN2109**	Spring, Manual Reverse Rod
M 160	**QML4197**	Lever, Reverse Moving
M 161	**QMF2359**	Holding Plate
M 162	**QDG1378**	Gear, Auto Stop
M 163	**QDP2025**	Pulley, Relay
M 164	**QXF0250**	Flywheel Ass'y
M 165	**QMF2361**	Flywheel Bracket (B)
M 166	**QBW2016**	Washer, Auto Stop Gear
M 167	**QBW2136**	Washer, Flywheel Ass'y
M 168	**RMCK4Z**	Shield Plate
M 169	**XTN26+8B**	Screw, Reverse Lever Plate etc. M'tg ⊕2.6×8
M 171	**XTN26+13B**	Screw, Head Plate M'tg ⊕2.6×8
M 172	**XTN26+16B**	Screw, Sub Plate M'tg ⊕2.6×1.6
M 173	**QBC1517**	Spring, Capstan
M 174	**XUEV3V**	Circlip, Auto Stop Gear
M 175	**QWQT0005**	Washer, Middle Pulley
M 176	**QXR2235**	REC Rod (B)
M 177	**QBW2007**	Washer, Flywheel

(Top View)



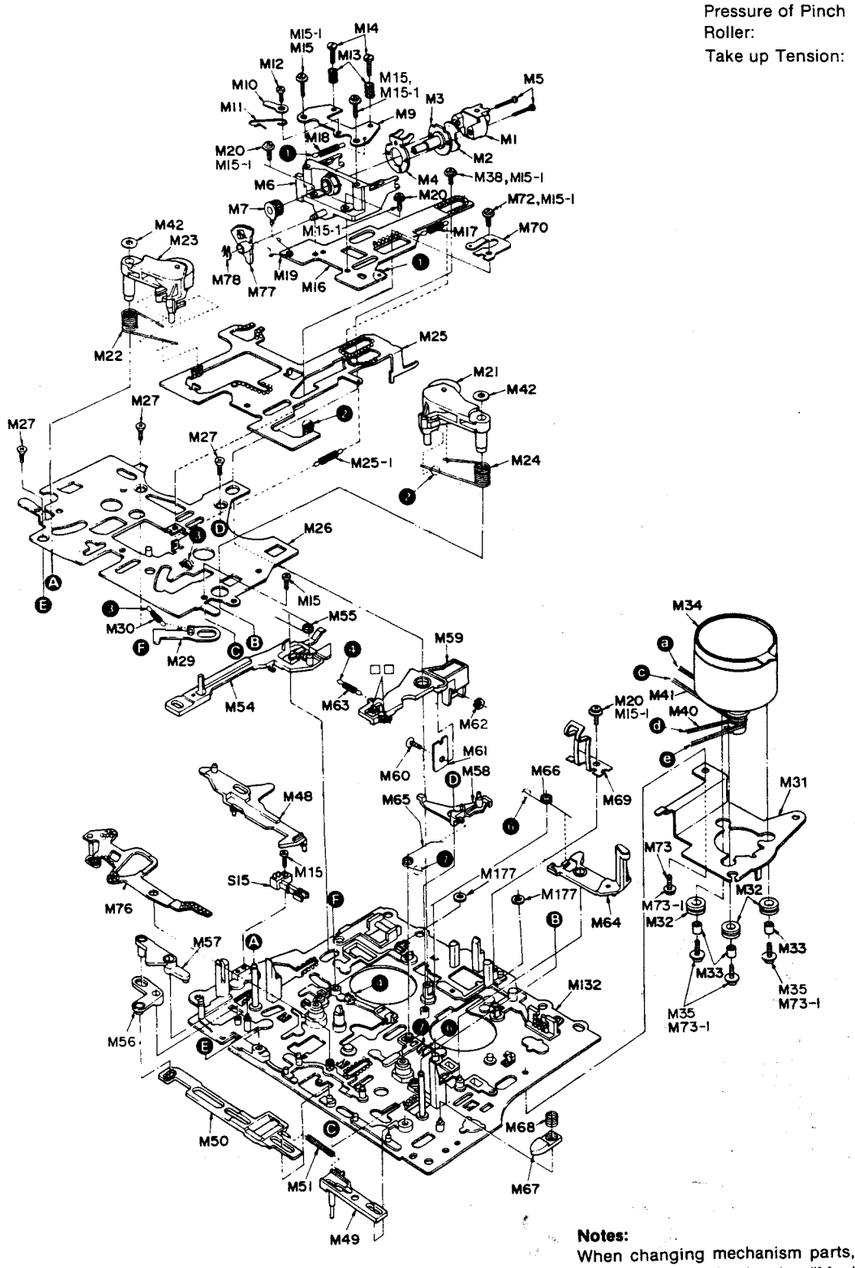
Wow/Flutter: 0.2% (WRMS)
Pressure of Pinch Roller: 280g
Take up Tension: (g · c

	Take up Torqu
Playback	30 $^{+10}_{-5}$
FF	60+30
REW	60+30

Notes:
When changing mechanism parts, apply the specified grease to t marked show in the drawing "Mechanism Parts Location".
- "□□" mark ... Rocol paste (Lubricating grease) "RZZ0L06"
- "○○" mark ... Molytone (Lubricating grease) "RZZ0L07"
- "△△" mark ... Dynamic (Lubricating grease) "RZZ0L05"
- "× ×" mark
  (Obrique Lines) ... Aero (Lubricating grease) "RZZ0L04"

RX-F22

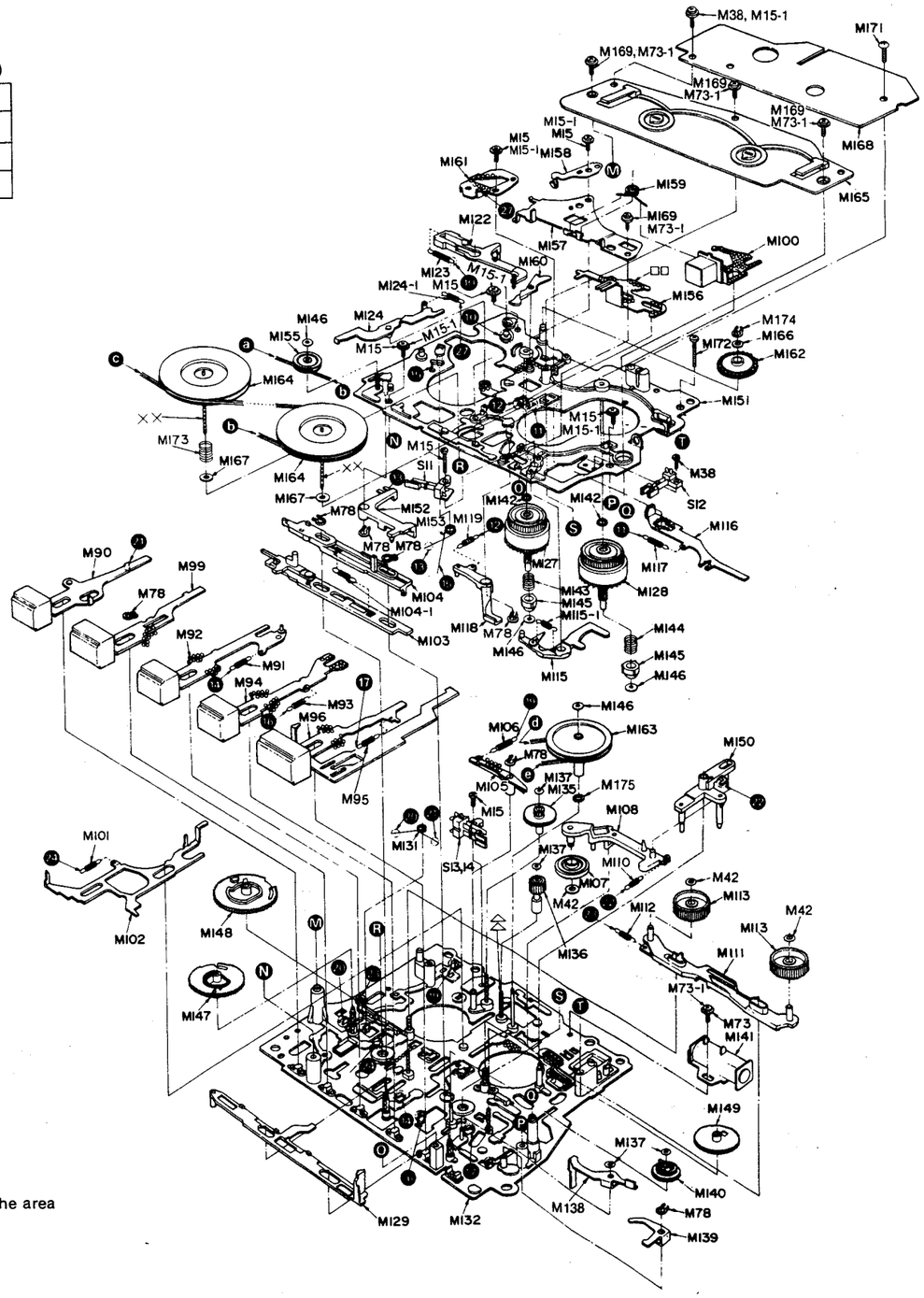
(Top View)



Wow/Flutter:	0.2% (WRMS)
Pressure of Pinch Roller:	280g
Take up Tension:	(g · cm)

	Take up Torque
Playback	30 $^{+10}_{-5}$
FF	60+30
REW	60+30

(Bottom View)



Notes:
When changing mechanism parts, apply the specified grease to the area marked show in the drawing "Mechanism Parts Location".
- "□□" mark ... Rocol paste (Lubricating grease) "RZZ0L06"
- "○○" mark ... Molytone (Lubricating grease) "RZZ0L07"
- "△△" mark ... Dynamic (Lubricating grease) "RZZ0L05"
- "× ×" mark
  (Obrique Lines) ... Aero (Lubricating grease) "RZZ0L04"

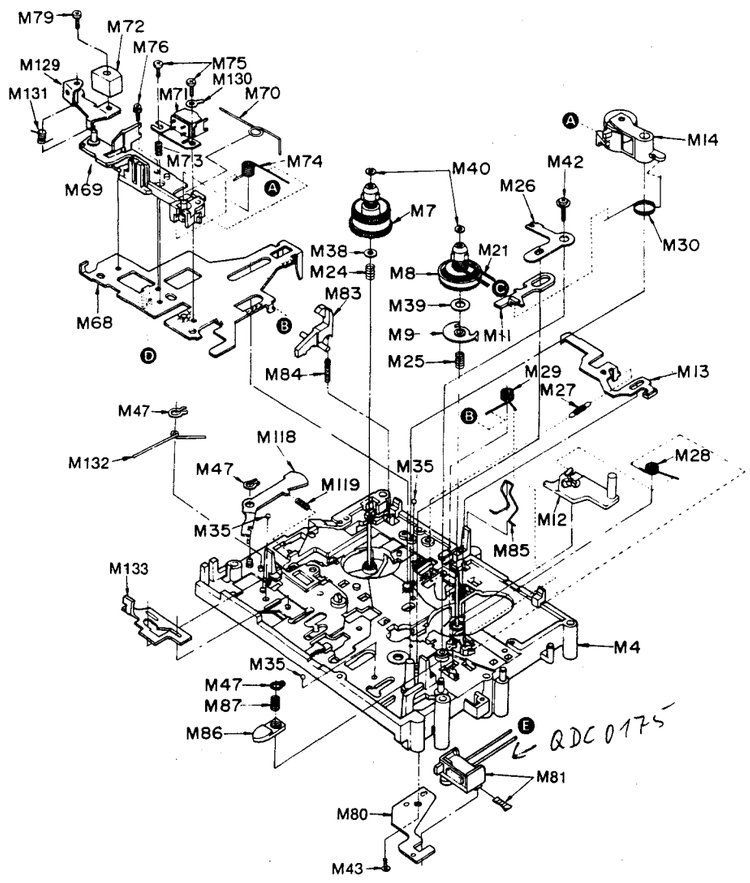
MECHANISM PARTS LOCATION (Tape [2] · R/P)

Notes:
When changing mechanism parts, apply the specified grease to the area marked show in the drawing "Mechanism Parts Location".
- "□□" mark ... Rocol paste (Lubricating grease) "RZZ0L06"
- "○○" mark ... Molytone (Lubricating grease) "RZZ0L07"
- "△△" mark ... Dynamic (Lubricating grease) "RZZ0L05"
- "× ×" mark
  (Obrique Lines) ... Aero (Lubricating grease) "RZZ0L04"

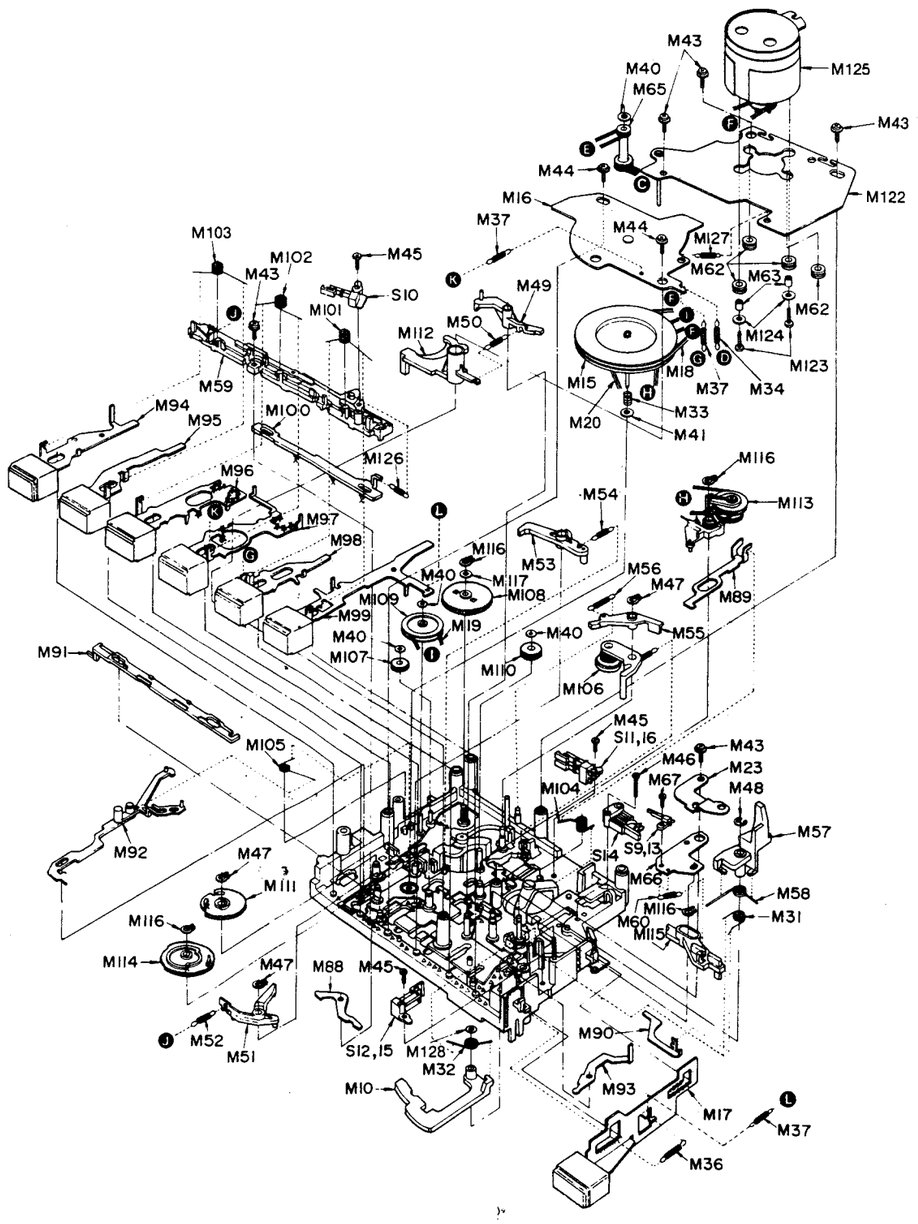
Wow/Flutter: 0.2% (WRMS)
Pressure of Pinch Roller: 170g $^{+40}_{-30}$ g (g · cm)
Take up Tension:

	Take up Torque
Playback	30 $^{+10}_{-5}$
FF	80±20
REW	80±20

(Top View)

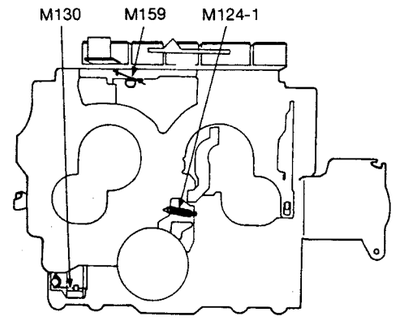


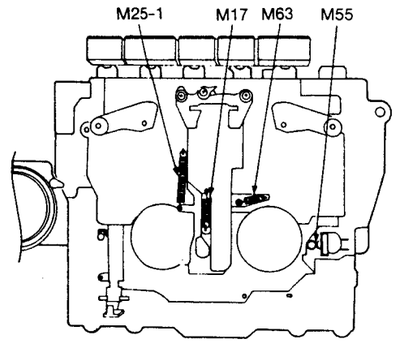
(Bottom View)



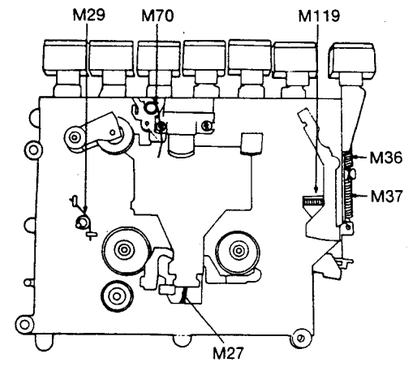
PARTS LOCATION OF S

TAPE [1]



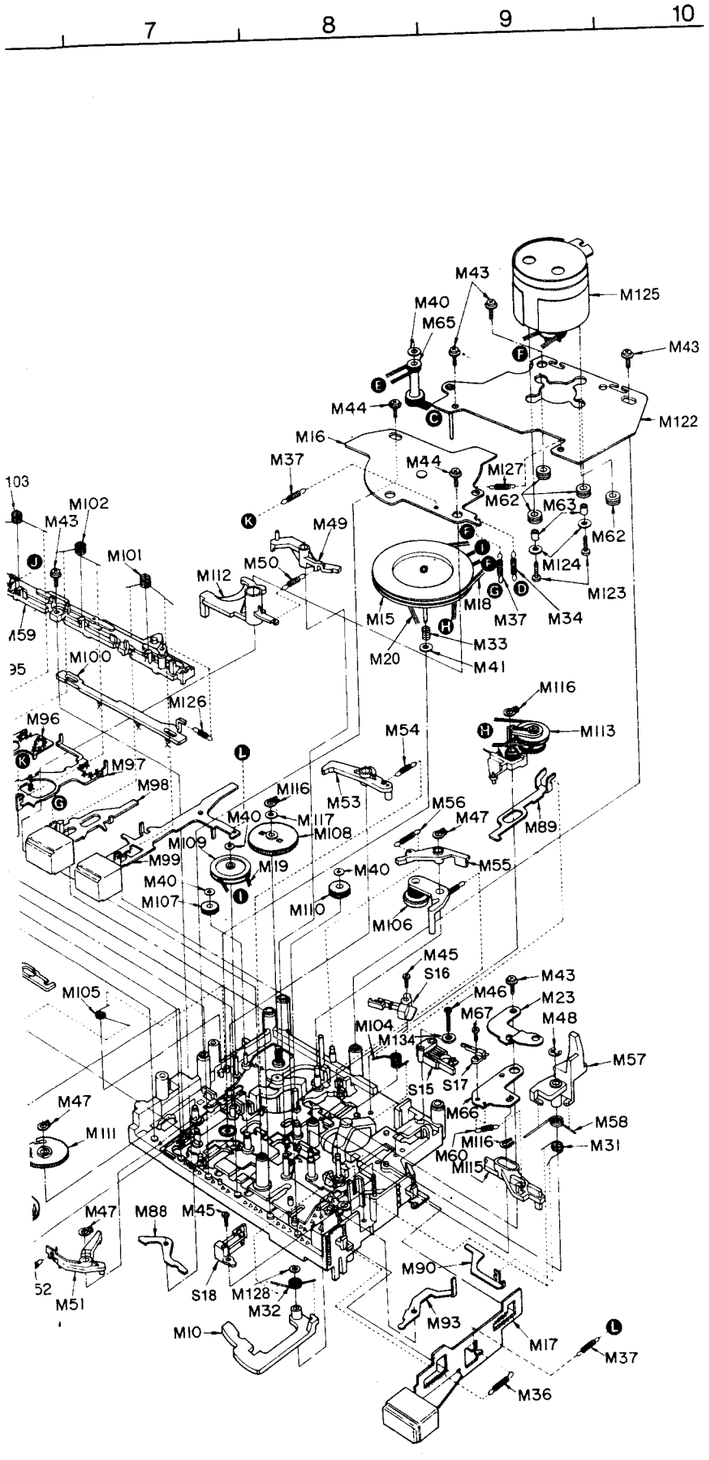


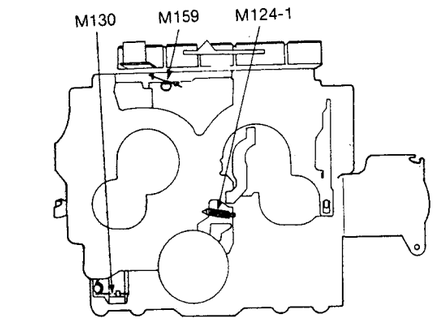
TAPE [2]

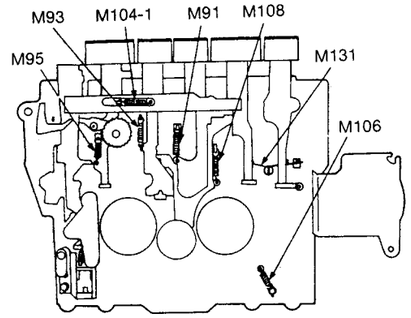


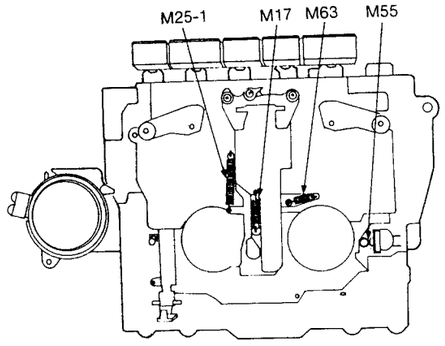
PARTS LOCATION OF SPRING

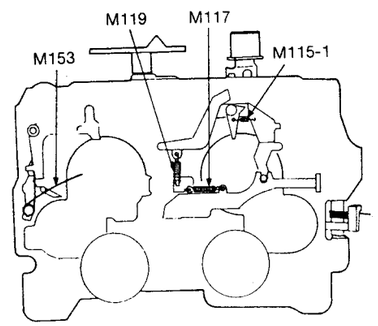
TAPE [1]











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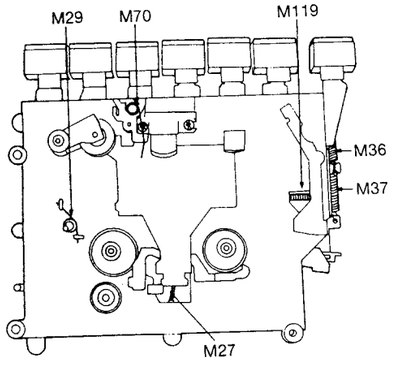

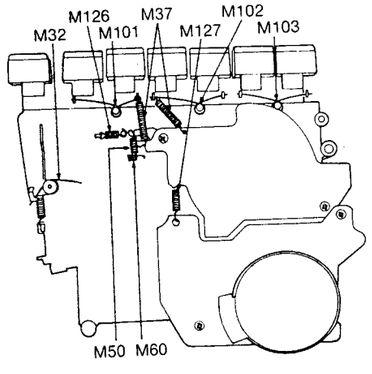

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description
		MECHANICAL PARTS
Tape [2]		
M 4	**QXKK1018**	Mechanism Chassis Ass'y
M 7	**QXD0152**	Supply Reel Table Ass'y
M 8	**QXD0157**	Take Up Reel Table Ass'y
M 9	**QDP1957**	Pulley, Full Auto Stop Detector
M 10	**QML4137**	Lever, Dubbing Lock
M 11	**QML3995**	Lever, Stop/Eject Select
M 12	**QML4012**	Lever, Eject
M 13	**QXT0005**	Brake Board Ass'y
M 14	**QXL1636K**	Pinch Roller Ass'y
M 15	**QXF0244**	Flywheel Ass'y
M 16	**QXH0433**	Flywheel Holding Plate Ass'y
M 17	**QXRK1022**	Dubbing Rod Ass'y
M 18	**QDB0375**	Belt, Flywheel
M 19	**QDB0351**	Belt, Middle Pulley
M 20	**QDB0342A**	F.F Belt
M 21	**QDB0376**	Belt, Middle Counter
M 22	**RDVK4Z**	Belt, Counter
M 23	**QMA4641**	Metal Plate, REC Lever
M 24	**RUQK1Z**	Spring, Supply Reel Table Ass'y
M 25	**QBC1493**	Spring, Take Up Reel Table Ass'y
M 26	**QBP1985**	Spring, Head Board Pressure
M 27	**QBC1440**	Spring, Brake Board Ass'y
M 28	**QBN1974**	Spring, Eject Lever
M 29	**QBN1996**	Spring, Head Board
M 30	**QBN1971**	Spring, Select Rod
M 31	**QBN1969**	Spring, REC Release Stop Lever
M 32	**QBN2072**	Spring, Dubbing Lock
M 33	**QBC1302**	Spring, Flywheel Ass'y
M 34	**QBT1997**	Spring, Flywheel Earth
M 35	**QDK1012**	Steel Ball
M 36	**QBT2044**	Spring, Dubbing Rod
M 37	**QBT1560**	Spring, Flywheel Holding Plate etc. M'tg
M 38	**QBW0042**	Washer, Supply Reel Table Ass'y
M 39	**QWQK0003**	Washer, Take Up Reel Table Ass'y
M 40	**QBW2008**	Washer, Reel Table Ass'y etc.
M 41	**QBJ3098**	Washer, Flywheel Ass'y
M 42	**XTW26+6SZ**	Screw, Head Board Pressure Spring M'tg
M 43	**XTW26+8S**	Screw, Counter Angle etc. M'tg
M 44	**XTW26+10S**	Screw, Flywheel Holding Plate Ass'y M'tg
M 45	**XTN2+6J**	Screw, Leaf Switch M'tg
M 46	**XTN2+12B**	Screw, Leaf Switch M'tg
M 47	**XUEV25V**	Circlip, Pause Lock Lever etc. M'tg
M 48	**XUC2FT**	Stop Ring, REC Lever M'tg
M 49	**QML3999**	Lever, Playback Moving
M 50	**QBT1990**	Spring, Play Moving Lever
M 51	**QML3996**	Lever, Pause Moving
M 52	**QBT1994**	Spring, Pause Moving Lever
M 53	**QML3994**	Lever, Head Board Operation
M 54	**QBT1991**	Spring, Head Board Operation Lever
M 55	**QML4003**	Lever, Full Auto Stop Error Prevention
M 56	**QBT1993**	Spring, Full Auto Stop Error Prevention
M 57	**QML4136**	Lever, REC
M 58	**QBN1990**	Spring, REC Lever
M 59	**QMG0314**	Bracket, Rod
M 60	**QBT1992**	Spring, Lock Rod
M 62	**QBG1373**	Motor Rubber
M 63	**QMSK0071**	Pipe, Motor Ass'y
M 65	**QDP2007**	Middle Pulley
M 66	**QMA4587**	Metal Plate, Leaf Switch
M 67	**XTN2+5B**	Screw, Leaf Switch M'tg
M 68	**QMK2028**	Head Base Plate
M 69	**QMZ1301**	Head Base
M 70	**QBN1962**	Spring, Head Base Moving
M 71	**QWY4147Z**	R/P Head
M 72	**RJH2C01XX**	Erase Head
M 73	**QBC1322**	Spring, R/P Head
M 74	**QBN1966**	Spring, Pinch Roller Ass'y
M 75	**XSB2D6**	Screw, R/P Head M'tg
M 76	**XSN2+C4**	Screw, Head Base M'tg
M 79	**XSB2D7**	Screw, Erase Head M'tg
M 80	**RULK2Z**	Angle, Counter
M 81	**QDC0175**	Counter
M 83	**QML3997**	Lever, Erase Safety
M 84	**QBC1437**	Spring, Erase Safety Lever
M 85	**QBN1711**	Spring, Cassette Pressure
M 86	**QML4009**	Lever, Pause Lock
M 87	**QBC1436**	Spring, Pause Lock Lever
M 88	**QML4005**	Lever, Pause Moving Relay
M 89	**QMR2076**	TPS Switch Operation Rod
M 90	**QML4007**	Lever, REC Release Stopper
M 91	**QMR2077**	Eject Slide Rod
M 92	**QXL1637**	Lever Ass'y, Full Auto Stop Detector
M 93	**QML4015**	Lever, Leaf Switch
M 94	**QXRK1020**	Pause Rod Ass'y
M 95	**QXRK1019**	Stop/Eject Rod Ass'y
M 96	**QXRK1018**	FF Rod Ass'y
M 97	**QXRK1017**	Rewind Rod Ass'y
M 98	**QXRK1016**	Playback Rod Ass'y
M 99	**QXRK1021**	Record Rod Ass'y
M 100	**QMR2078**	Lock Rod
M 101	**QBN1963**	Spring, R/P Rod
M 102	**QBN1964**	Spring, FF/REW Rod
M 103	**QBN1965**	Spring, Pause/Stop Rod
M 104	**QBN1995**	Spring, TPS Switch Operation Rod
M 105	**QBN1970**	Spring, Full Auto Stop Detector Lever Ass'y
M 106	**QXL1644**	Idler Lever Ass'y With Pulley
M 107	**QDG1299**	Gear, Rolling
M 108	**QDG1298**	Gear, Full Auto Drive
M 109	**QDP1954**	Pulley, Middle
M 110	**QDG1297**	Gear, Rewind
M 111	**QDG1303**	Gear, Pause/TPS Moving
M 112	**QML4011**	Lever, Playback Moving
M 113	**QXL1646**	Lever Ass'y, FF
M 114	**QDG1302**	Gear, Head Board Moving
M 115	**QML4001**	Lever, Record Operation
M 116	**XUEV3V**	Circlip, Full Auto Drive Gear etc. M'tg
M 117	**QBW2016**	Washer, Full Auto Drive Gear
M 118	**QML4234**	Safety Plate
M 119	**QBC1505**	Spring
M 122	**QXA1468**	Angle, Motor
M 123	**XSN26+6**	Screw, Motor Ass'y M'tg
M 124	**XWG26**	Washer, Motor Ass'y M'tg
M 125	**QXU0369**	Motor Ass'y With Pulley
M 126	**QBT2048**	Spring, Lock Rod
M 127	**QBT1901**	Spring, Lock Board
M 128	**QBW0053**	Washer, Dubbing Lock Lever
M 129	**QML4235**	Erase Head Base Plate
M 130	**QJT0039**	Lug Terminal
M 131	**QBN1975**	Spring, Erase Head
M 132	**QBN2130**	Spring, Erase Head Operation, Rod
M 133	**QMR2095**	Erase Head Operation Rod
M 134	**XWG2**	Washer, Leaf Switch M'tg

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2nd Original 4963

ORDER NO. GAD8706112S4

Service Manual

Supplement

Radio Cassette

RX-F22

(Silver)

FM-AM-FM Stereo Dual Cassette Recorder

• Please use this supplement together with the service manual for model No. RX-F22 order No. GAD850650C4.

This is the Service Manual for the following areas.

[ME] ···For AAFES EUROPE.

[MF] ···For AAFES PACIFIC.

[MZ] ···For Audio Club.

Service Manual Replacement Sheets.

In the RX-F22 [ME] [MF] [MZ] Service Manual, there were mistakes under "Mechanism Parts Location" and "Replacement Parts List".
We are sorry for the inconvenience this will cause you, but would you please replace the "Mechanism Parts Location" and "Replacement Parts List" sections of the original Service Manual with this RX-F22 [ME] [MF] [MZ] Supplement.

Pages to be replaced: pp. 19, 20, 21 (Tape 1)
pp. 22, 23, 24 (Tape 2)

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